

**docebo**

**All in on AI**

**Your Guide  
to Practical  
Applications  
for Artificial  
Intelligence  
in L&D**

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**\*A note on how to use this document:** This guide is meant to act as a living document, which will be continuously updated to reflect advances in learning-centric AI functionalities.

## AI Transforms Learning Into a Competitive Advantage

Data has long been coined the new oil, but data on its own won't power your organization's learning engine. It's now critical to transform the data collected by your platform on your learners' activities into actionable insights that create unique experiences – with artificial intelligence (AI).

What's unique about AI in the context of e-learning is that it is built on learning-specific algorithms, powered by a fine-tuned combination of machine learning, deep learning and natural language processing.



### Learning-Specific Algorithms

#### Machine Learning

A system where a computer learns without being explicitly programmed. For example, in machine learning capacities, a computer program is trained to recognize patterns or complete an action, such as identifying someone's face or responding to a request for information. Training the system requires exposure to as many variables to completing a task as possible, using different types of input data.

#### Deep Learning

In deep learning, interconnected layers of software-based calculators – “neurons” – form a neural network, which ingests vast amounts of input data and processes it through multiple layers. These layers learn increasingly complex features of the data at each layer. The network can then make a determination about the data, understand if its determination is correct, and then use what it has learned to make determinations about new data.

#### Natural Language Processing

The ability of machines to understand and interpret human language the way it is written or spoken. Its objective is to make computers/machines as intelligent as humans in understanding language. The ultimate goal is to close the gap between how humans communicate (natural language) and what the computer understands (machine language).

These specialized algorithms have been developed to enable your learning platform to automatically perform some of the actions that you would do manually, either as a learner or admin.

For example, your learning platform can now safely and securely analyze nearly all of the different types of content that you're adding into your platform (from PDFs, web links, multimedia, A/V etc.), and find ways to enhance and simplify the learning experience.

Learners can use the platform's global search to find the most relevant content for them without an admin needing to manually tag the content or add additional fields.

Additionally, learners can invite other learners to view their freshly-uploaded informal learning content based on these algorithms' abilities to analyze both the new content and the historic learning patterns and content preferences of other learners in the platform.

The best part is it all happens behind the scenes, without ever interrupting the learning experience.

- AI exposes endless possibilities for civilization, and in incredibly positive ways (contrary to what Hollywood might suggest)
- Think: smart automation of various admin tasks, plus the complete personalization of learning
- AI is dependent almost entirely on algorithms developed by human beings
- AI performs tasks that would normally require human intelligence, such as visual perception, speech recognition, decision-making and translations



A survey of 3,000 business leaders by Boston Consulting Group and MIT Sloan Management Review found that many executives understand AI's potential, but have yet to put a strategy that leverages it into action. Here are some of the most interesting findings from the survey.



Of executives believe AI will enable their companies to move into new businesses



Almost 85% believe AI will allow their companies to obtain or sustain a competitive advantage



Over 60% of all companies don't have an AI strategy in place



Only about one in five companies has incorporated AI in some offerings or processes

## L&D Has Evolved to Reflect The Expectations of The Modern Learner

Adapting to the needs and expectations of today's learners means recognizing:

- A wider acceptance of learning technology
- A deeper understanding of the importance of instructional design
- That organizations must invest in the professional development of their workforces, because that's what their learners expect
- A focus on the actual outcomes of learning, as it's an effective way of connecting learning to organizational performance, and therefore revenue

### L&D has evolved to

- **Recognize the need for a wider acceptance of technology**
- **Develop a deeper understanding of the importance of instructional design**
- **Invest in professional development**
- **Place a renewed focus on learning outcomes**
- **Make actual use of simulation and gaming in learning activities**



# We've Entered the Third Generation of L&D



GENERATION

**GEN 1**  
**LMS**  
Formal

**GEN 2**  
**Social**  
Experiential  
collaborative

**GEN 3**  
**AI**  
Personalized  
and Automated

CONTENT SOURCE

WHO

L&D ROLE

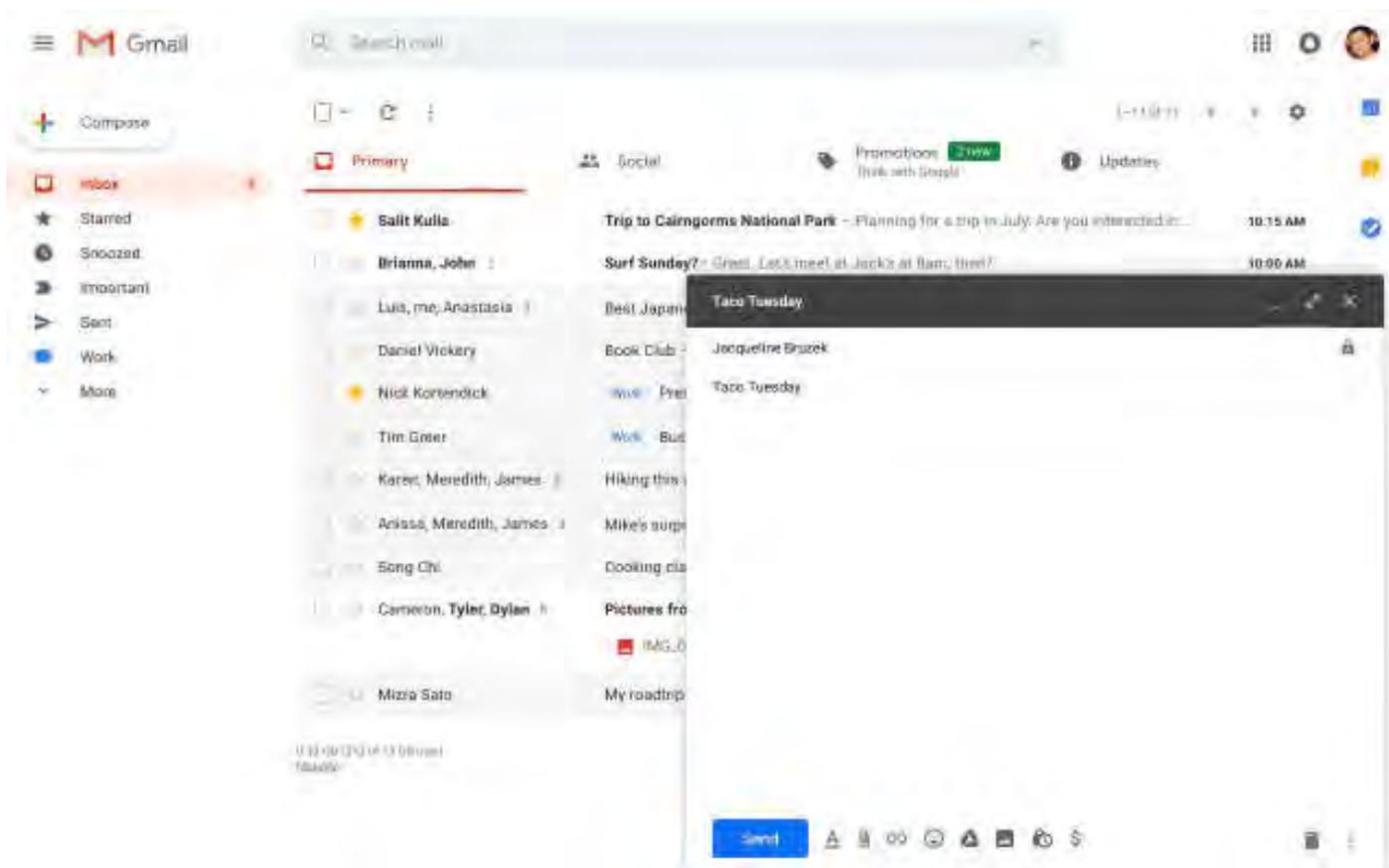
IT'S ABOUT...

L&D (Internal)	L&D and Learners (Internal)	AI aggregates & curates internal + external sources
Designed for Admins	Learners contribute and learn from others	AI augments learning and relieves admins from tasks
Commodity	Facilitation	Competitive Advantage
Management of things	Empowerment of learners	Personal learning experience, Automation

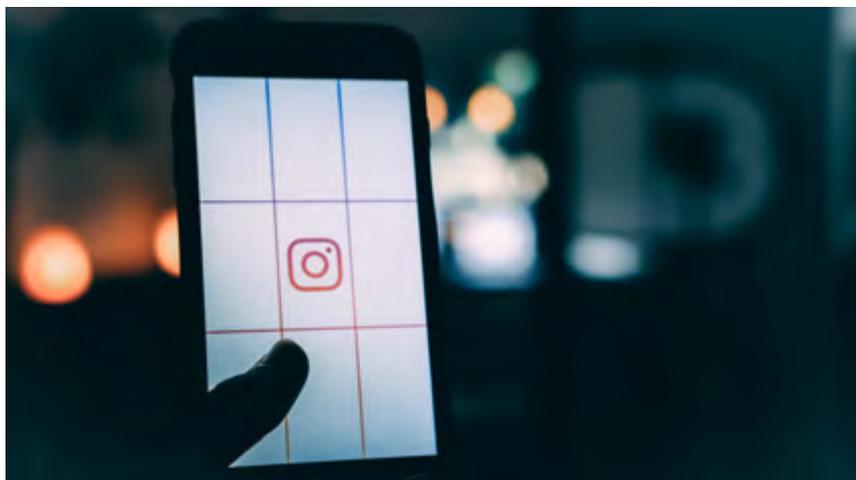


## AI in Real-Life

For example:



GOOGLE™ USES A TOOL CALLED 'NUDGING' TO REMIND YOU TO FOLLOW UP OR RESPOND TO MESSAGES THAT ARE OLDER THAN TWO OR THREE DAYS, MAKING SURE YOU DON'T FALL BEHIND ON IMPORTANT COMMUNICATIONS.



INSTAGRAM® USES AI TO GIVE DIFFERENT WORDS (OR SLANG) CONTEXTUAL MEANING AND SERVE THE USER A FUN EMOJI THEY MIGHT USE INSTEAD IN THEIR IMAGE CAPTIONS.



VIDEO GAMES, SUCH AS CALL OF DUTY® AND FAR CRY®, USE AI TO TRAIN COMPUTER-GENERATED ENEMIES TO ANALYZE DIFFERENT IN-GAME ENVIRONMENTS TO FIND AREAS/ACTIONS THAT COULD BE BENEFICIAL TO THEIR SURVIVAL, AND MAKING IT MORE DIFFICULT AND REALISTIC FOR THE HUMAN PLAYER AT THE CONTROLS.

## AI in L&D is Much More Than a Content Suggestion Engine

When most people consider how AI's impact is already being felt in our everyday lives, the go-to response is the suggestion engines that power the content recommendations you see each time you log into Netflix or Amazon.

Indeed, AI is the backbone of these suggestion engines, and in the context of e-learning it would be easy to pigeonhole a learning platform's AI functionalities to just that: a suggestion engine.

“AI is not only about “suggestions” – in fact, it’s a poor example that pigeonholes the technology’s potential in L&D...”

**Donato Mangialardo,**  
Director of Product Marketing, Docebo

AI-powered learning is much more than that.

By making AI the engine upon which the whole learning platform lies, L&D has the opportunity to open up new capabilities for admins to develop more immersive and personalized learning experiences, while automating menial tasks.

For learners, AI drives the three E's that are key to achieving better learning experiences: *Expedience, Efficiency and Effortlessness*.

The effectiveness of AI depends on how much people actually use the system: the more data the system processes, the more AI learns about individual learner needs, turning the learning platform into a continuous improvement engine that grows alongside your learners.

## AI Helps to Take Control of Menial Admin Tasks Via Automation

A significant portion of an L&D professional's time is spent at their desk, designing course catalogues for their learners, but this is a function that could be sufficiently mitigated by AI.

It's possible because, by applying the right metadata, the machine could develop and provide course catalogues to specific users based on roles and habits, via recommendation engines.

**Offloading these tasks to AI would afford L&D leaders a lot more time to focus on what's truly important to the overall success of the learning programs: the content!**

While AI is disruptive on a macro scale, it's beauty is in its simplicity: it helps us in ways we want it to, that we might have not thought of on our own.

## AI Doesn't Equal Machine Learning, But AI Needs Machine Learning

Machine learning is to Artificial Intelligence what books are to learning...

**Artificial Intelligence:** The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. In the context of enterprise learning, AI has the incredible potential to amplify technology to make data-driven analysis and decisions (faster), emphasize areas of improvement for individual learners and create immersive learning experiences – not just lessons.

**Machine Learning:** a system where a computer learns without being explicitly programmed. For example, in machine learning capacities, a computer program is trained to recognize patterns or complete an action, such as identifying someone's face or responding to a request for information. Training the system requires it to be exposed to as many variables to completing a task as possible, using different types of input data.

Consider the difference like this

### Machine Learning

A computer gathers information about dogs and refines it over time.

### Artificial Intelligence

The computer categorizes those dogs based on that information - AI achieves this task, in the sense that the computer used it to categorize dogs based on that refined information gathered during machine learning.

## A Few (of the Many) Benefits of Truly Automated Learning, Powered by AI

Boost engagement and results

Machine learning algorithms predict outcomes, allowing you to provide specific content based on a learner's past performance and individual goals. For example, online learners that express a particular skill gap receive targeted recommendations that build knowledge related to their skill gap, in a more personalized format. This could include scenarios where the system would recognize that a learner might be able to actually skip a few modules to take a more comprehensive and less linear learning journey than someone who might lack the basic skills related to that particular topic.



Allocate resources to tasks of value

Learners receive the exact online resources they require to fill gaps and achieve learning goals, which equates to less seat time and training payroll hours. Instead, employees get the information they need quickly, as online training resources are tailor-made to their personal and professional objectives. Additionally, L&D admins and support staff spend less time analyzing metrics and reports to instead focus on producing top-notch learning content. With AI, the system takes care of big data so the L&D team can spend more time and energy on more valuable tasks.

Automate content scheduling and delivery

For such a game changing technology, it's ironic that AI and machine learning are, in fact, designed to handle fairly menial, yet crucial tasks in the name of saving humans time to focus on bigger picture activities. With AI, your learning platform could schedule coursework or deliver resources based on individual learner assessment results or simulations. This would create an environment in which it would be possible to automatically predict course maps for each of your learners who enroll in any of your organization's courses, and then re-adjust whenever the need arises.

Boost ROI

Consider this simple formula:

**Less training time + greater personalization = better learning outcomes**

You would spend less on online training without sacrificing desired outcomes, as predictive analytics and your AI-equipped learning platform track and forecast every move each of your learners make. This also gives you the power to launch online learning resources wherever and whenever they're required.

## AI Without Data is Like a Car on Empty

AI requires regular data injections to be most effective. Think of AI as a learner itself: the more data it consumes, the more intelligent it becomes, making tasks such as complete learning personalization and the automation of administrative tasks more effective the longer it has to steep in the depths of your learning platform.

It needs to be exposed to as many variables to completing a task as possible, using different types of input data. Some AI systems create their own tasks after they've identified the goals for the data they've been fed.

As an example, and in the context of learning, the effectiveness of an auto-tagging functionality depends on a consistent stream of data to become more useful (and more valuable to learners) over time.

Auto-tagging "listens" to content assets, understanding various keywords to produce a number of tags that assist with categorization and search, without the need to do so manually, saving the admin and learner time when uploading content. If a particular piece of content is ever updated, the AI continues to crawl that piece of content and update tags if necessary.

This is particularly helpful when it comes to enabling learning in the flow of work, where the learner is seeking out an answer to a specific question, at the point of need. We like to use the example of the traveling salesperson: someone in the car or in the airport, and has an urgent request from a prospect on a technical aspect of your product.

Over time, as the AI is fed more and more tags, which are also editable by humans, the functionality becomes more effective, enabling a continuous improvement cycle within the backend of your learning platform that requires absolutely zero human intervention.

*In its simplest form, e-learning was meant to speed-up learning without sacrificing quality... AI amplifies that*

## Personalized Learning at Scale

While it might be easy to look at AI and consider it as simply another feature of learning technology designed to make it easier or cheaper, seeing AI for its true potential requires looking at learning through a completely different lens.

That means understanding that each user is different. Personalized content and its presentation, accommodating personal preferences and learning styles for each of your learners (personalization “at scale”) is impossible without AI. Personalized learning involves passing some control over to learners, giving them some input into how they progress through their learning activities.

Taking learning experiences further with AI means expanding the scope of the availability and effectiveness of your learning content, especially as it relates to the availability of flexible learning opportunities via smartphones and tablets and the development of personalized content that reflects individual learner needs.

These functionalities would take personalization to a whole new level because the system essentially takes the wheel to drive the overall effectiveness of an individual learner journey. Machine learning algorithms predict outcomes, allowing you to provide specific content based on a learner’s past performance and individual goals.

***For example, online learners that express a particular skills gap receive targeted recommendations that build knowledge related to their skill gap, in a more personalized format. This could include situations where the system would recognize that a learner might be able to actually skip a few modules to take a more comprehensive and less linear learning journey than someone who might lack the basic skills related to that particular topic.***



## Make Truly Personalized Learning a Reality AI Extends The Reach of Your Learning Content

Personalized learning involves passing some control to learners, giving them a way to manage how they progress through their L&D activities.

- With AI instead of pre-determined pathways, the learner takes more control over the direction of their learning
- AI gathers data to determine a learners knowledge of a specific skills, then creates a constantly evolving learning pathway for him/her to take
- AI doesn't just enhance the learning platform, but makes it responsive to learner needs by adapting intelligently to their request

Functionalities such as Invite-to-Watch are a learning process, not a static formula – in a different, but similar context to the ways your learning activities will evolve over time. And this is a very good thing for L&D admins and their learners, as AI essentially grows alongside your learners to produce results that continue to improve over time.

### AI-Powered Enterprise Learning is Here

Docebo's first artificial intelligence (AI) debuted with version 7.5 in September 2018. This includes a comprehensive global search for content within the platform, as well as automatically generated labels for formal and informal learning content. With Invite-To-Watch, users can invite students to view informal learning content they have uploaded to the platform.

As with many new features and functionalities in our platform, we want to ensure that you know exactly what's going on and how to best use these innovative and time-saving features. This document outlines some questions and answers that you may have about Docebo's artificial intelligence capabilities and the practical applications the technology offers to enterprise learning.



### Auto-Tagging

Upon sharing a new learning asset (e.g. a video), AI “listens” to the entire video, understands the keywords, and creates up to 10 tags, which help categorization and search (tags can also be manually edited if necessary).



### AI-Powered Deep Search

Upon sharing a new learning asset or creating a new learning object, AI “analyzes” the entire asset, understands the keywords to produce search results that are immensely more relevant. For example, a video is searched and discovered by its actual content to produce much more effective learning experiences by putting content learners want in front of them, easily and more effectively.



### Invite-To-Watch

Invite-to-Watch elevates the social learning experience by automatically generating a list of learners who have engaged with similar content, allowing users to easily share content with those who will value it most.

## AI Extends The Reach of Your Learning Content

Invite-to-Watch is designed to elevate the social learning experience by ensuring that those who will value a particular piece of learning content most actually get their eyes on it. When a user uploads a piece of learning content to Coach & Share, the platform automatically produces a list of those within the organization who might find it interesting. AI (machine learning in this case) analyzes the content to produce a list of users who have shown an interest in similar assets in the past.

Doing so requires our algorithms to analyze both new content and historic learning patterns, including content preferences of learners in the platform. As the system is fed more and more

content, it becomes more and more effective at identifying patterns within the content and those who will find it most useful to produce more effective social learning experiences.

The best part? AI happens behind the scenes, without ever interrupting the learning experience for learners or any work required by administrators.

## AI FAQs

### ***How does Artificial Intelligence currently work in the Docebo learning platform?***

The artificial intelligence in your platform lets your learning platform automatically perform some of the actions that you would do manually yourself either as a learner or admin, such as tagging informal learning content that you contribute to the Coach & Share module or formal training material that you upload into courses or in your Central Repository.

The concept is simple: We use specialized algorithms to safely and securely analyze nearly all of the different types of content that you're adding into your platform (from PDF to documents, from web links to multimedia and A/V etc.), and find ways to enhance and simplify the learning experience. Learners can use the platform's global search to find the most relevant content for them without the Superadmin needing to manually tag the content or add additional fields.

Additionally, learners can invite other learners to view their freshly-uploaded informal learning content based on our algorithms' abilities to analyze both the new content and the historic learning patterns and content preferences of other learners in the platform.

It all happens behind the scenes, never interrupting the learning experience for learners or any work that you may need to perform as an admin.

### ***What do I need to know about how Docebo uses and/or stores the data used in algorithms?***

The content and data that are analyzed and used in Docebo's artificial intelligence algorithms are used only for the purpose of enhancing the learning experience of your learners in your specific platform, and all data is anonymized. Docebo does not share or sell any data used for these algorithms, and the artificial intelligence used in the platform is GDPR compliant.

Data is not shared from learner-to-learner, from learner-to-admin (and vice-versa), nor from your platform to Docebo staff.

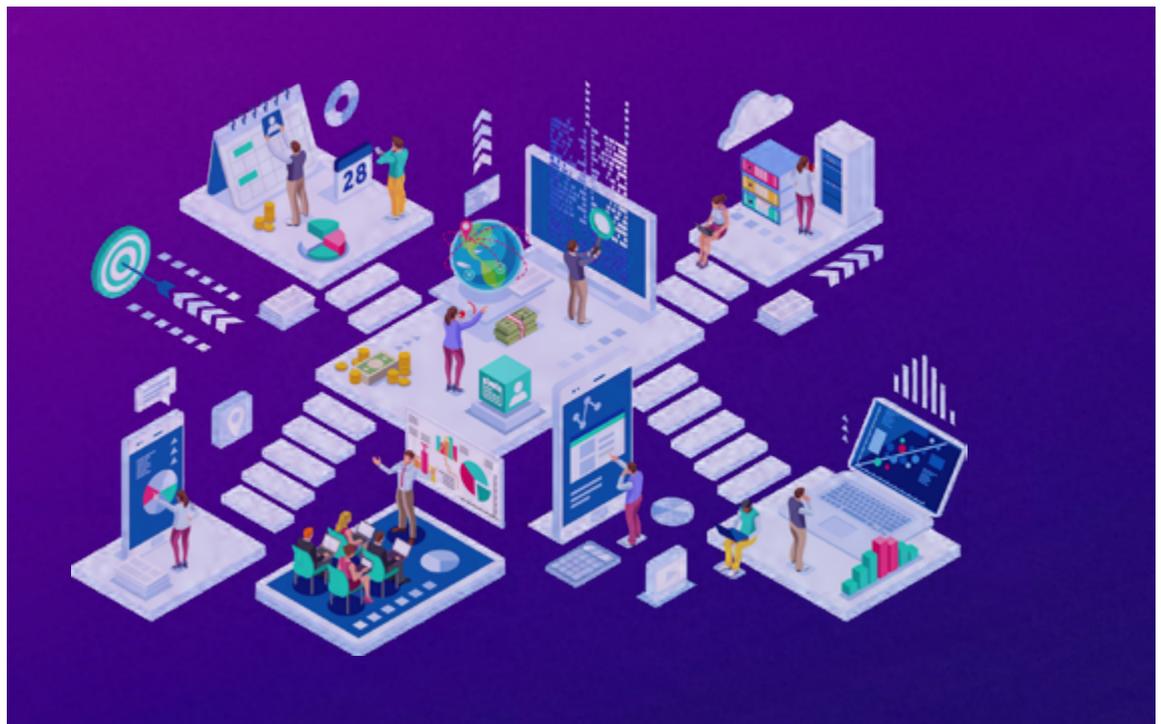
### ***What about content uploaded in the platform before AI was included?***

Even though these innovative artificial intelligence features have been released in Docebo's 7.5 platform, Docebo realizes that you may have anywhere from dozens to thousands of assets, both informal and formal learning content, already existing in your product, and we don't want them to miss out on any of the AI fun.

Over the next few months, Docebo will go back through all existing content in all platforms to analyze it to include in the deeper global search functionality, so content that you uploaded before 7.5 will eventually get the Docebo AI experience. Please note that we understand that you may have already added tags to your existing content. In order to avoid potential misalignment in the work you've already done, we will not be auto-tagging older content.

### ***Will Docebo's artificial intelligence eventually work with content in languages other than English?***

Although Docebo's AI features for auto-tagging and a deeper global search at the moment work for only English content, there is full intention to add the AI capabilities for all languages supported in the platform over time. We will incrementally roll out these capabilities for other languages over the next few months, together with incremental enhancements and maintenance of all AI functionality. Keep an eye on the [Product Update](#) page for more information in the future.



## We're Just Scratching The Surface... Here is a Glimpse Into The Future

### AI PILLARS IN E-LEARNING



This is only the beginning of AI in e-learning, marking the starting point for an incredibly exciting adventure that will revolutionize the way people learn with AI. Docebo encourages you to not only explore the AI functionalities that our platform brings to life in its learning platform, but also to stay tuned to our activities over the next year or so as we introduce even more transformative technology that's guaranteed to elevate your learning programs and the learner experience.

AI is a vehicle for foundational change in L&D. It will become the beating heart of your learning strategy – the fuel you need to drive your learning efforts and your workforce into the future.

Docebo was founded on a culture of innovation and strength in leadership. We're proud to share this vision and release the foundation of a movement that will transform the future of enterprise learning with artificial intelligence.

# docebo

**TURN LEARNING INTO YOUR ORGANIZATION'S COMPETITIVE ADVANTAGE WITH AI**

**START YOUR FREE TRIAL TODAY**

Docebo is changing the way people learn with artificial intelligence. While traditional enterprise learning technologies have dictated the way people learn with formal courses pushed from the top down, Docebo's AI Learning Platform facilitates personalized and automated learning experiences in the flow of work to drive growth, organizational performance and revenue. Docebo is designed to power a cohesive L&D strategy, and has been embraced by more than 1,500 companies around the world for its ability to satisfy multiple use cases for both internal and external enterprise learning.



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