

GUIDE



THE DEFINITIVE GUIDE TO MICROLEARNING

The what, why, and how-to guide to leveraging microlearning

VALAMIS

TABLE OF CONTENTS

Foreword	3
1. What Is Microlearning?	3
2. A Micro-history on Microlearning	5
3. What's the Difference Between Microlearning and Macrolearning?	6
4. Why Are Microlearning Videos So Effective?	10
5. Microlearning for Every Generation	11
6. The Challenges of Microlearning	13
7. What Are the Benefits of Microlearning?	14
8. Learning, Memory and Knowledge Transfer	16
9. Memory and Microlearning	18
10. Questions to Ask When Building a Microlearning Strategy	22
11. Microlearning Best Practices Checklist	24
12. Personalized Microlearning	24
13. Adaptive Microlearning	27
14. The Future of Microlearning	28
15. Sources	29

FOREWORD

Microlearning's power comes from the shorter duration of learning. In this definitive guide of Microlearning, you will discover an in-depth look and understanding of why Microlearning is effective. Microlearning is a logical response to the fast-paced societies we live in, driven towards efficiency. In this definitive guide, you will discover an in-depth understanding of Microlearning and why it is important to leverage learning that can be fulfilled in a short duration of time, over time. We will ask and aim to answer:

- How do you learn **faster?**
- How do you **retain more information?**
- How do you **retain information for a longer period of time?**
- How do you **learn and retain the right information?**
- How do you **learn, retain, and know how to transfer your knowledge to other challenges?**
- How do you **scale and manage the quality of learning to different people from different places, with different backgrounds and different motivations?**
- **How do you do all of this simultaneously?** ¹

1 | What Is Microlearning?

Let's break the word down into 2 chunks:

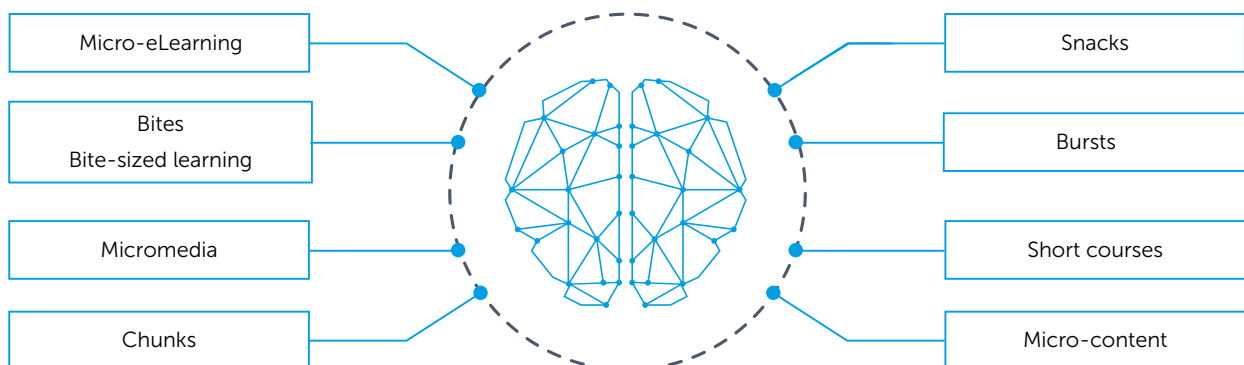
MICRO

- ✓ Very small
- ✓ Involving minute quantities or variations

MACRO

- ✓ The activity or process of gaining knowledge or skills by studying, practicing, being taught, or experiencing something
- ✓ Knowledge or skills acquired by instruction or study
- ✓ Modification of a behavioral tendency by experience (such as exposure to conditioning)
- ✓ To cause something to be in your memory by studying it

Microlearning has a few nicknames:



Microlearning Can Be Defined As:

Short and small chunks of information used to meet a specific learning outcome. There is no definitive time requirement for Microlearning, but typically Microlearning content takes the learner 1-10 minutes to consume.

5 MICRO-QUOTES ABOUT MICROLEARNING FROM THE EXPERTS

1

"[Microlearning] is based on the idea of developing small chunks of learning content and flexible technologies that can enable learners to access them more easily in specific moments and conditions of the day, for example during time breaks or while on the move".¹

SILVIA GABRIELLI, STEPHEN KIMANI, TIZIANA CATARCI

2

"Microlearning content is short and focused enough to meet an immediate need. It is a video, article, blog, ebook, audio clip or another form of content that can be indexed and found easily".²

JOSH BERSIN

3

"...things we can quickly read, view, or consume and they only take 10 minutes or less. These may be a video, a blog, or a set of instructional questions that help us think differently than we did before. We as information-seeking animals consume this kind of material all day, and most of the news sites and social networks now offer such learning in a massive, curated stream".³

JOSH BERSIN

4

"No matter if learning refers to the process of building up and organizing knowledge, to the change of behaviour, of attitudes, of values, of mental abilities, of cognitive structures, of emotional reactions, of action patterns or of societal dimensions, in all cases we have the possibility to consider micro, meso and macro aspects of the various views on more or less persisting changes and sustainable alterations of performances".⁴

THEO HUG

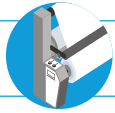
5

"Learning from content accessed in short bursts, content which is relevant to the individual, and repeated over time to ensure retention and build conceptual understanding".⁵

DONALD H. TAYLOR

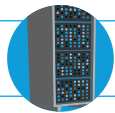
2 | A Micro-history on Microlearning

Once upon a time, we lived in a world without computers, the Internet, and mobile phones — devoid of the power to access information that was buried in stacks of paper. Technology and inventions have paved the way for Microlearning. Take a look at the 200+ year micro-history of Microlearning:



1800

Charles Babbage, a British mathematician, invented the "Analytical Engine," the first computer resembling the computers we have today after borrowing technology from the weaving machine known as the "Loom".²⁶



1936

Alan Turing, proposed the concept of the 'universal computing machine' also known as the "Universal Turing machine" or a-machine (automatic machine). Turing is the father of the modern computer.²⁷



1960

PLATO, (Programmed Logic for Automatic Teaching Operations) the first learning platform was developed. A computer-based education system was created in 1960 by Donald L. Bitzer at the University of Illinois at Urbana-Champaign (UIUC). In addition to being used successfully as a teaching tool, PLATO also spawned one of the first successful online communities.⁵



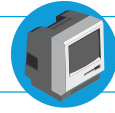
1991

EKKO, The first fully-featured Learning Management System (LMS) was developed and released by Norway's NKI Distance Education Network.⁸



1989-90

The World Wide Web was given life when Tim Berners-Lee, a British researcher-developed Hypertext Markup Language, or HTML.⁷



1982

Time magazine named the computer its "Man of the Year".⁶



1993

The National Science Foundation (NSF) removed restrictions on the commercial use of the Internet, giving internet access to the world.⁹



1996

The Nokia 9000 Communicator, the first all-in-one phone, fax, calendar, email and Internet in hand portable size, was released.



2005

The first Microlearning conference was held in Austria.¹⁰



2020

It is a fast-paced, "on-the-go" society. The way we solve problems has been disrupted by the introduction of the Internet. You want to know how to put together an Ikea desk but you can't find the manual? Google it. You want to know the score of the Warriors' basketball game and Steph Curry's shooting average? Ask Alexa. You want to learn Spanish? Download the Duolingo app and practice during your commute to work.



2016

Mobile web browsing overtakes desktop browsing for the first time.¹³



2007

Apple released the first iPhone, and iTunes U.^{11 12} "It's just an amazing way for lifelong learners to get more material," said Chris Bell, Apple's director of worldwide marketing for iTunes.

Every day, we are Microlearning. Anything is possible when you can find and act on information.

3 | What's the Difference Between Microlearning and Macrolearning?



MACROLEARNING



MICROLEARNING

What does the prefix mean?	Large, long, over time, large scale	Small, short, minute in scale
What is it?	Developing a new skill and level of understanding	Exploring concepts and solving practical problems
What is the desired outcome from learning?	The learner wants a new skill or deeper understanding of a concept	The learner wants to solve a specific problem.
What is the content like?	<ul style="list-style-type: none"> • Large modules • Elements of formal learning • Complex issues • Learning arranged over time 	<ul style="list-style-type: none"> • Small nuggets of information • Elements of informal learning • Simple issues • Learning just-in-time, on-the-job
When is it important in the workplace?	Understanding the job, people, systems, strategies, industry, environment	Injections of new information at all career stages to solve various problems faced every day
How long does it take?	Hours - Days	1 second - 15 minutes
Examples	<ul style="list-style-type: none"> • Courses, classes, MOOCs • Mr. Miyagi training the Karate Kid to be a martial arts master • I want to learn Photoshop • For the first month, we will do onboarding and compliance training to get you up to speed. • I took a course in Spanish and studied abroad and I am now fluent • Course textbooks 	<ul style="list-style-type: none"> • Video, blog, instructions • The Karate Kid learning to "wax on, wax off" • I want to crop an image • Watch this 2-minute video on how to set up your work computer • I learned how to say "where is the bathroom?" in Spanish • Snapple fact

6 More Examples of Microlearning

1. MICROCOPY

Short, targeted, highly contextual messages or hints, to help users learn.

Examples:

- *error messages*
- *contact form explainers*
- *eCommerce hints*



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FIGURE 1. Tooltip from Google Drive explaining that every revision on the document is saved.

2. MICROLEARNING VIDEOS

Microlearning videos are usually designed to be either a standalone nugget that offers a specific learning takeaway or they are a component of a longer learning path/objective.

Examples:


- *explainer videos*
- *brief & interactive videos*
- *micro-lectures*
- *whiteboard animations*
- *kinetic text-based animations*

3200+ talks to stir your curiosity


Find just the right one

Active filters: learning


Sort by:




Mike Rowe
Learning from dirty jobs
Posted Mar 2009




Fields Wicker-Miurin
Learning from leadership's missing manual
Posted Nov 2009




Malcolm McLaren
Authentic creativity vs. karaoke culture
Posted May 2011



Sir Ken Robinson
Bring on the learning revolution!
Posted May 2010



Jim Toomey
Learning from Sherman the shark
Posted Aug 2010



Bunker Roy
Learning from a barefoot movement
Posted Oct 2011

FIGURE 2. Ted Talks are micro-lectures that feature an expert speaking on a specific topic, limited to a maximum of 18 minutes.

3. MICROLEARNING APPS OR MOBILE APP

Apps that give you micro-lessons, on-the-go.

Examples:

- Google
- Youtube
- Headspace
- Lasting
- Word of the day
- TED



4. MICRO-CHALLENGES AND GAMES

Learning that is scored at the end, that can include an award, benefits, badges, notoriety, or other incentives for taking part or achieving a high score.

Examples:

- multiple question quizzes
- polls, flashcards
- question & responses
- simulations
- learner recordings to answer questions



5. INFOGRAPHICS

Infographics (and often iconic, focusing on key points and numerical values) are graphic visual representations of information, data, or knowledge.

Examples:

- *statistical infographics*
- *informational infographics*
- *timeline infographics*
- *process infographics*
- *geographic infographics*
- *comparison infographics*
- *hierarchical infographics*
- *list infographics*



6. SOCIAL MEDIA

Social media can be used as a micro-blogging exercise, and you can learn nuggets of information from the stream of content you subscribe to. Social media can be used as an activity feed of online communities of practice.

Examples:

140 character snippets of news on social media

- *Twitter*
- *Wall Street Journal*
- *LinkedIn*
- *Reddit*



4 | Why Are Microlearning Videos So Effective?

Video gives you the ability to capture both visual and auditory channels at once, also known as **dual coding theory**, which allows you to spread the burden for processing the information across these two channels, providing more room for processing and retention.¹⁵ Microlearning videos are short and allow our brains to take a break in order to process the information, helping avoid overloading the capacity of your working memory, also known as "cognitive overload." Video is a popular mechanism for story-telling. A study by Wista has shown, that the shorter the video, the more engaged the audience will be. All of these factors demonstrate the power of short, Microlearning videos for engaging viewers.⁵⁵

VIDEO IS POPULAR



Global reach

YouTube uploaded its first video in 2005, and as of 2018, It is localized in 91 countries and can be accessed in 80 different languages.¹⁶

91 *The number of countries in which it is localized.*



People like video

YouTube has nearly 2 billion logged-in monthly users. That's 1 billion hours of videos watched every single day.¹⁶

1 billion *The number of hours watched on it every day.*



People prefer video & learning is better

The average user spends 88% more time on a website with video than a website without one.¹⁷ Adding visuals to words improved transfer of learning by 89%.¹⁸

88% *More time spent on a website by the average user.*

VIDEO IS A STORYTELLING MEDIUM



An effective learning medium

A picture is worth a thousand words. A video is anywhere from 24-60 frames (pictures) per second. 1 minute of video is worth 1.8 million words.²⁰

1,8 million *The number of words that equals to 1 minute of video*



Visual information eases comprehension

"Stories are remembered up to 22 times more than facts alone."¹⁹

22 *The number of times that seeing the stories exceeds other static data*



Learning is easier with a visual component

"Multimedia presentations (such as narrated animation) are more likely to lead to meaningful learning than single-medium presentations" (like static visuals in a PowerPoint or an audio recording like a podcast).²¹

Majority of presentations benefit from additional graphs, animations and video.

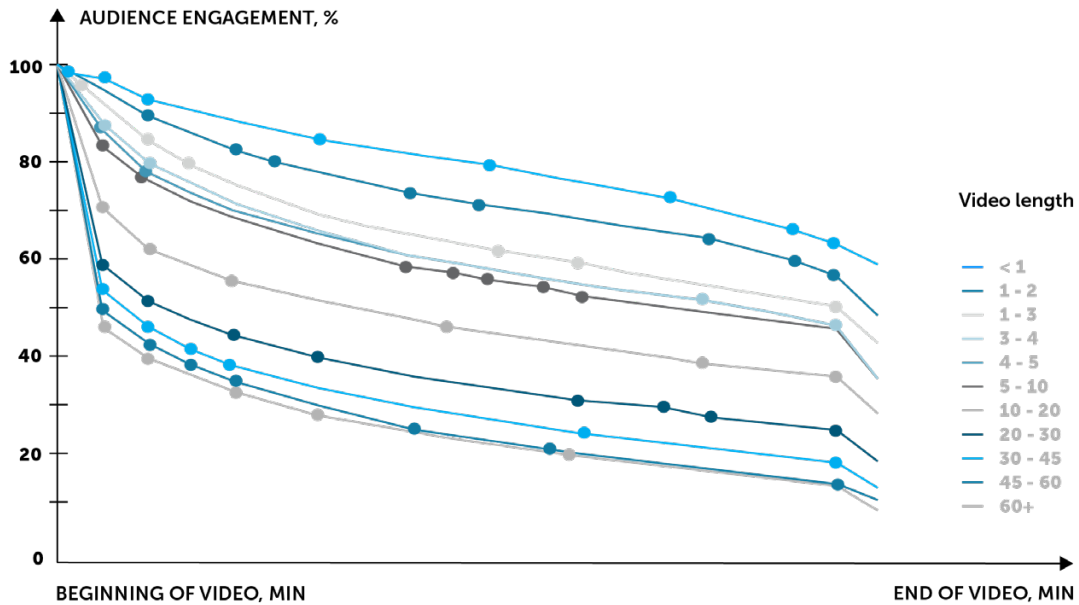


FIGURE 3. Wistia's data illustrates the length of the video directly affects audience engagement.²²

5 | Microlearning for Every Generation

Gen X, Millennials, Gen Z, and future generations will have grown up with mobile phones, the Internet, and access to information that is likely to keep increasing as new inventions arise. The combination of the mobile phone and high-speed Internet has given life to Snapchat, Instagram, Facebook, and other social networks. Information sharing, the dawn of data as a currency and data used as a tool to personalize information have all been influential in shaping the most "informed" generations the world has seen thus far. What also makes these generations unique is the desire to learn and develop.

It is important to know and understand all generations that make up the workforce because as of 2019, Millennials are projected to number 73 million, overtaking Baby Boomers as the largest living adult generation,²⁵ and by 2025 Millennials alone will make up 75 percent of the workforce.²⁴

Driven to Earn and Driven to Learn

Millennials are more educated than any generation, but their financial well-being is complicated.²⁵ The Great Recession of 2008 had interesting implications for Millennials. Although Millennials are more educated, their median debt was nearly 50% greater (\$19,000) than for Gen X debt holders when they were young (\$12,800).

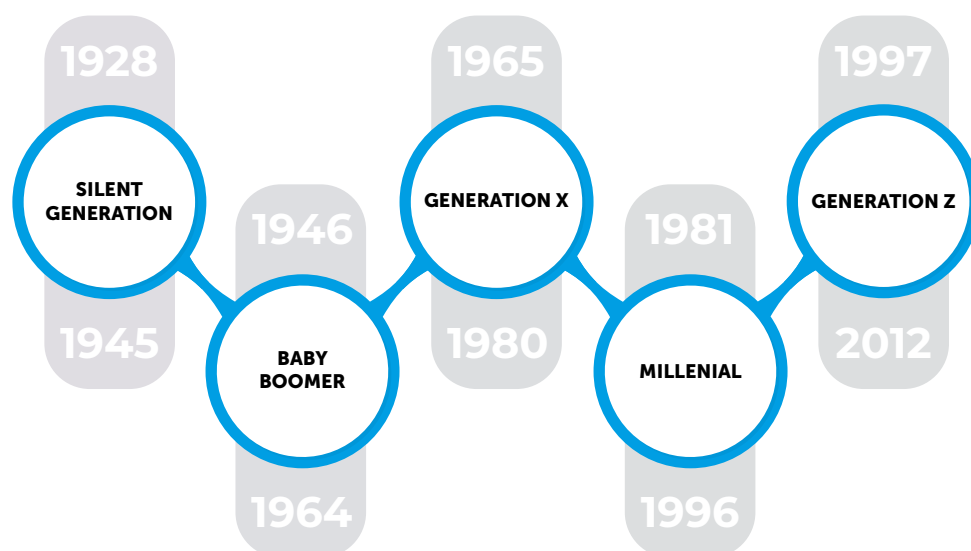
While young adults in general do not have much-accumulated wealth, Millennials have slightly less wealth than Boomers did at the same age. This modest difference in wealth can be partly attributed to differences in debt by generation.²⁵ Compared with earlier generations, Millennials have more outstanding student debt, and the amount of it they owe tends to be greater.²⁵ It is likely that the complex financial situation for many Millennials and younger generations, is a driving force in their pursuit of learning and development, in order to grow personally, professionally and financially.

The Learning Generations

According to *Gallup's latest* report, *How Millennials Want to Work and Live*, 59% of Millennials say opportunities to learn and grow are extremely important to them when applying for a job.²³ Comparatively, 44% of Gen Xers and 41% of Baby Boomers say the same about these types of opportunities.²³

Additionally, an impressive 87% of Millennials rate professional or career growth and development opportunities as important to them in a job - far more than the 69% of non-Millennials who say the same.²³ As part of their candidate attraction strategy, companies should accentuate their learning and development programs, pointing to tuition reimbursement policies, on-the-job training, means of certification, participation in conferences and professional organizations, and other learning opportunities.

Furthermore, companies should publicize how managers support employees in meeting their developmental goals. When candidates are speaking to recruiters, interviewers or hiring managers, they should come away with a clear idea of what the organization can offer them in terms of ongoing growth opportunities.²³



More Information, Less Time

Millennials and younger generations have more access to information, as well as more information to access. Information saturation requires sufficient time to sift through it, or the tools to help you find what you need. Luckily, platforms like YouTube have nearly perfected their search algorithms, delivering the most relevant content recommendations, which has helped spur Microlearning on-the-go.

In fact, 70 percent of Millennial YouTube users watched a video to learn how to do something new.²⁸ Engaging educational videos have been so successful that Google announced in October 2018 that it would invest 20 million dollars into its YouTube Learning initiative, which would pay creators to make even more educational content—explainers, how-tos, lectures, and informational videos.²⁹

Millennials have fully adapted to Microlearning as a mechanism to cope with limited time and infinite resources. The rise of smartphones has massively contributed to the improved access to learning content from anywhere, and at any time. However, the increased demand for Microlearning does not come without its challenges.

6 | The Challenges of Microlearning

The 5 Biggest Challenges in Microlearning

1

Scaling personalized content

Personalizing millions of pieces of content so that it is relevant to every individual person can be extremely tedious.

2

Updating content

Content becomes out-of-date and irrelevant very quickly. The more content you have, the more difficult it becomes to manage.

3

Accessibility for all

*“e-learning innovations also generate new polarisations in learning opportunities and life chances: people need to be digitally literate in order to access digital learning tools, and they cannot participate in e-societies and e-cultures, unless they have access to and know how to use digital information and communication channels”.*³⁰

Although less than 2% of the global illiterate population lives in the Central Asia, Europe and Northern America, and Oceania, it is important to note that Southern Asia is home to almost one-half of the global illiterate population and other rates of illiteracy fluctuate around the world. Literacy creates one of the biggest hurdles for the digitally disadvantaged in the ability to access and understand Microlearning content.³¹

4

Time

The #1 reason employees feel held back from learning is because they lack the time to learn.³² Despite Microlearning's shorter learning modules, people still may lack the time to fit in a few minutes of learning a day. This could also indicate that employees lack the time to search for learning that is relevant to them.

5

Creating a culture of learning

Motivating individuals with different aspirations is not easy. How do you create a culture of learning, when your organization is comprised of many different people? How do you personalize motivation?

7 | What Are the Benefits of Microlearning?

A fast-paced society needs access to fast-paced learning. The biggest benefits of Microlearning can be broken down into 3 categories:

Time, Relevance, and Results

PROBLEM

MICROLEARNING SOLUTION

TIME

EMPLOYEES DON'T HAVE TIME

The #1 reason employees say they are not engaging in workplace learning is because they don't have the time.³²

LEARNING THAT TAKES A MINUTE

Microlearning usually takes 1 - 10 minutes*

TIME

CAN'T ACCESS LEARNING FROM EVERYWHERE

It is difficult to start a large course on-the-go and have to leave in the middle of the lesson, and remember to pick up where you last left off.

MOBILE-FRIENDLY

Microlearning is mobile-friendly so you can learn on-the-go. Short sized lessons make it easy to fit into a busy schedule. Learn (nearly) anywhere, any time.

TIME AND RELEVANCE

LEARNING ISN'T PACED FOR EVERYONE

58% of employees prefer to learn at their own pace and 49% of employees prefer to learn at the point of need.³²

SELF-PACED LEARNING

Microlearning allows for learners to determine their own learning pace. Microlearning promotes informal learning. Learners can research solutions to their problems at the moment of need rather than an inflexible formal learning structure.

Learners that struggle with certain topics or excel at certain topics, can move at their own pace without waiting.

Creating, publishing and sharing of micro-content on the Internet opens up new possibilities for implicit, informal and incidental forms of learning, such as Microlearning, the term referring to short learning activities with microcontent.³³

TIME

EMPLOYERS DON'T HAVE TIME

Employers don't have time to make long content, or to continuously review and update it.

QUICK DEVELOPMENT AND REDEPLOYMENT

Microlearning videos are ideal for an agile training development and deployment.

There are a lot of Microlearning resources available online already. Organizations can supplement their own training content with other online content. Shorter content is easier to review.

PROBLEM

MICROLEARNING SOLUTION

RELEVANCE

IRRELEVANT CONTENT

The longer the content, the more likely that a part of the content will not relate to each and every person.

RELEVANT CONTENT

Microlearning videos are ideal for an agile training development and deployment.

There are a lot of Microlearning resources available online already. Organizations can supplement their own training content with other online content.

Shorter content is easier to review.

TIME

CAN'T FIND THE SOLUTION WHILE ON THE JOB

If a person needs to revisit the training while on-the-job to find a quick solution to a problem, they will not want to be tasked with searching through a lesson that takes 40 minutes to complete.

JUST-IN-TIME LEARNING

Microlearning's narrow focus and quick answers to learners' needs make it an easy option as a Performance Support Tool that brings in specific learning aids to learners at the moment of their need.

RELEVANCE

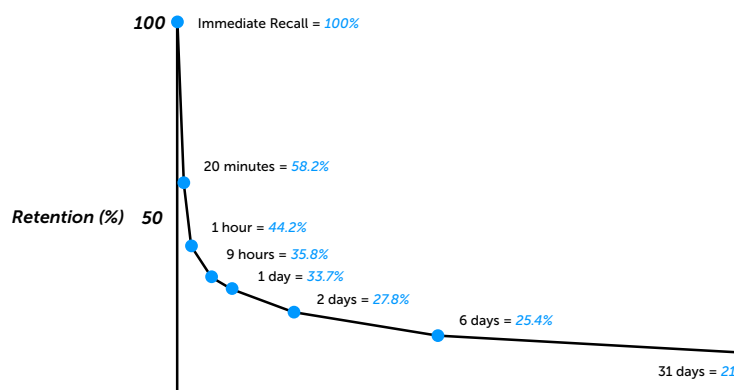
PEOPLE FORGET THE TRAINING

We don't remember things we learned a month ago and that's exactly what the "Forgetting Curve" diagram by Hermann Ebbinghaus (seen on the right) illustrates – we forget 80% of what we learned in 30 days.³⁴

Z

INJECT KNOWLEDGE OVER TIME AND REMEMBER MORE

Microlearning facilitates self-directed lifelong learning, as short activities can be easily integrated into everyday activities. Small learning steps with small chunks of information can be used for learning in between and on-demand. In this way Microlearning enables individuals to stay up-to-date in today's knowledge society. Small injections of information to review what was learned helps to reinforce knowledge, and remember.



RELEVANCE AND RESULTS

LEARNING ISN'T ALIGNED WITH BUSINESS GOALS

It can be very difficult to align large courses and pieces of content to business goals.

TARGETED CONTENT FOR TARGETED OUTCOMES

Microlearning videos target a specific learning outcome in a small amount of time, and they offer higher recall and retention. Microlearning is typically less expensive to develop and maintain, which can contribute to a higher ROI.

8 | Learning, Memory and Knowledge Transfer

In order to attempt to understand why Microlearning is so powerful, we must understand what it means to learn. How will we know the power of learning, if we don't fully understand what it is?

Learning Can Be Defined As:

- **The activity or process of gaining knowledge or skill by studying, practicing, being taught, or experiencing something**
- **Knowledge or skills acquired by instruction or study**
- **Modification of a behavioral tendency by experience (such as exposure to conditioning)**
- **To cause something to be in your memory by studying it**

To oversimplify and combine all of those definitions, learning is the act of absorbing information, and using it. How can you prove whether or not someone has absorbed information? How can you prove whether or not someone has learned?



Application of the Information Is Key

Knowledge "Transfer" is a cognitive practice whereby a learner's mastery of knowledge or skills in one context enables them to apply that knowledge or skill in a different context. Because transfer signals that a learner's comprehension allows them to recognize how their knowledge can be relevant and to apply it effectively outside the original learning conditions, transfer is often considered a hallmark of true learning.³⁸

Learning experiences are typically measured with a focus on how well information is memorized and the ability to repeat previously taught information, or a "script," defined as a standard procedure or routine for a specific situation. It is especially important to understand the kinds of learning experiences that lead to transfer, defined as the ability to extend what has been learned in one context to new contexts.³⁵

In 1973, Steve Jobs decided to audit a calligraphy class. Fast forward a few decades — Jobs credits his calligraphy class as the inspiration for the typography in Macintosh computers. Steve Jobs was able to recall prior experiences, and apply them to different contexts.

"If I had never dropped in on that single course in college, the Mac would have never had multiple typefaces or proportionally spaced fonts. And since Windows just copied the Mac, it's likely that no personal computer would have them. If I had never dropped out, I would have never dropped in on this calligraphy class, and personal computers might not have the wonderful typography that they do. Of course it was impossible to connect the dots looking forward when I was in college. But it was very clear looking backward 10 years later".

STEVE JOBS³⁶

NEAR TRANSFER

FAR TRANSFER



Knowledge	Ancient Egypt in 1330 BC vs. 1325 BC	Ancient Egypt vs. China	Ancient Egypt vs. Modern United States	Ancient Egypt vs. Romantic Literature
Physical	Same classroom	Different classroom at same school	Different schools	School vs. everyday life
Time	In the same lesson	In the same day	Weeks or months later	Years later
Task	Pythagorean calculation vs. calculation with new numbers	Pythagorean calculation vs. calculation with diagrams	Pythagorean calculation vs. calculation with word problems	Pythagorean calculation vs. calculation with authentic problems
Functional	Solely academic	Academic vs. assessment	Academic vs. professional	Academic vs. personal
Format	Same format as before	Multiple choice vs. short answer	Written vs. oral responses	Verbal vs. non-verbal

FIGURE 4. The Knowledge Transfer Spectrum by Cognitive Scientist, Pooja K. Agarwal shows that the more simple the knowledge transfer is to a relatively similar context, it's called, "near transfer" and when it is more substantial, it's called, "far transfer."³⁷

Lack of application implies someone has either failed to absorb the information (memory), or failed to use the information (knowledge transfer). Sometimes people exhibit great memory, but lack effective knowledge transfer, and vice versa.

Knowledge Transfer	Memory	Equals	Example
✓	✓	Can remember information and transfer knowledge	A CHRO learns about Organizational Culture and Motivation. They draft an incentive scheme drawing on techniques and structures from the Two-Factor Theory of motivation.
✗	✗	Can't remember information and can't transfer knowledge	An instructional designer learns about Adaptive e-learning. They can't remember what they learned and they can't apply it to different contexts on-the-job.
✗	✓	Can remember information but can't transfer knowledge	An executive reads about Tacit Knowledge in a journal. They remember what it means, but they can't apply any familiar concepts to challenges in their role.

So how do we get people to remember and apply knowledge to new challenges? How do we get people to build on knowledge from one year to the next? How do educators prepare people to transfer their education and personal experiences to the workforce?

9 | Memory and Microlearning

In the mid-1880s, Hermann Ebbinghaus became the first person to create a scientific approach to study and classify memory and introduce the world to concepts like the learning curve and forgetting curve. A firm understanding in memory is important in assessing how people learn, retain information, and transfer their knowledge.

The 4 Main Types of Memory



Sensory

Sensory memory is a very brief (fraction of a second to about three seconds) recall of a sensory experience, such as what we just saw or heard. Some compare sensory memory to a quick snapshot of what you just experienced that quickly disappears.

Echoic (hear):
Remembering a phone number as someone says it to you out loud.

Haptic (touch):
Remembering the feel of a silk sheet.

Iconic (see):
Visualizing a shooting star 3 seconds after it has passed.



Long-Term

Remembering of information over time; anything more than a minute and can last a few days or years.

Last year I won an award.



Short-Term

Temporary recall of the information which is being processed at any point in time.

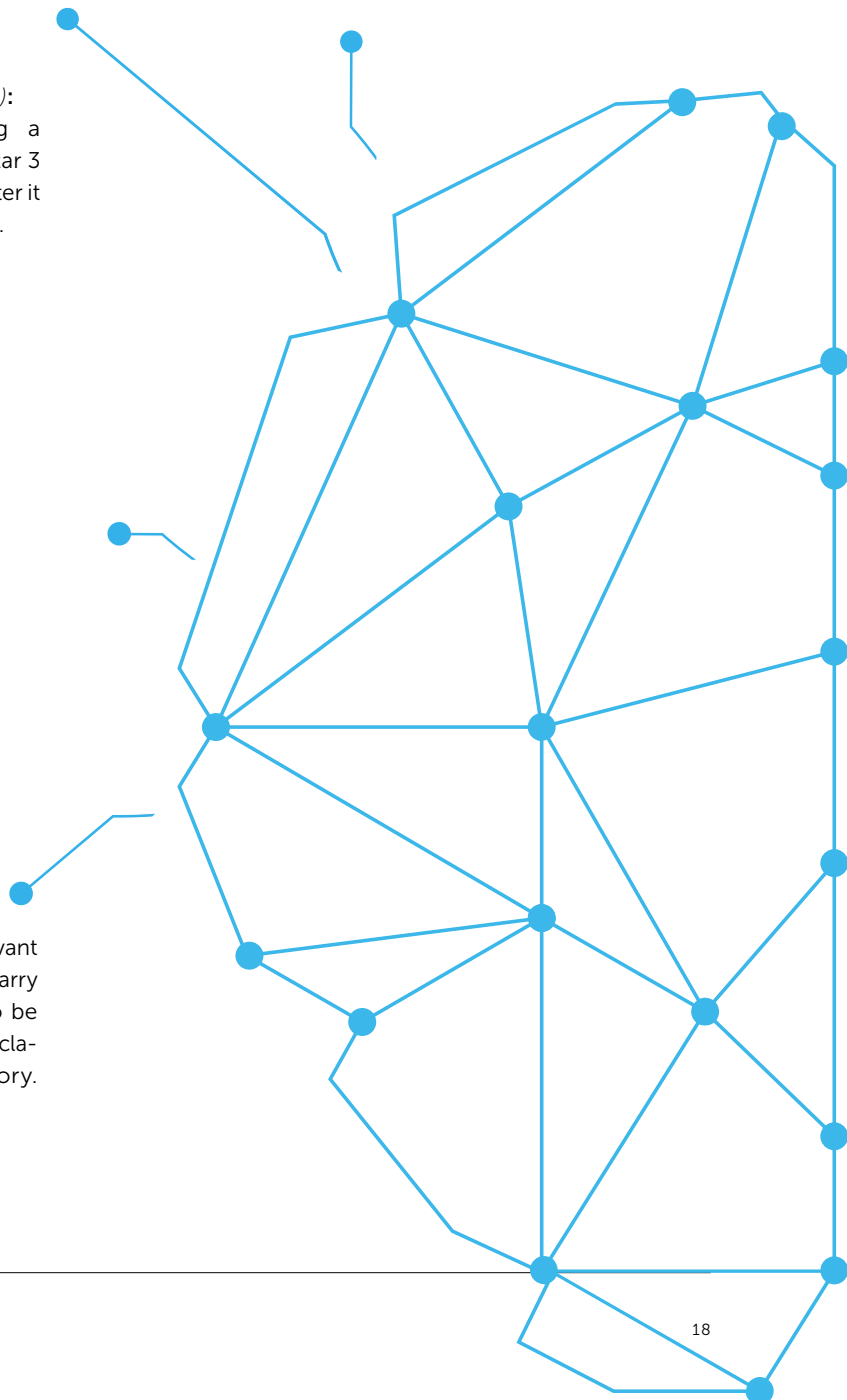
I wore jeans yesterday.



Working

Working memory is the ability to remember and use relevant information while in the middle of an activity, in order to carry out a task. The working memory model is thought to be divided into two subcomponents; one is responsible for declarative, while the other represents procedural memory.

Remembering how to make an omelette.



Types of Long Term Memories

1. Explicit

CONSCIOUS MEMORY

Memory of facts, experiences and specific events in time in a serial form, from which we can reconstruct the actual events that took place at any given point in our lives. It is the memory of autobiographical events (times, places, associated emotions and other contextual knowledge) that can be explicitly stated. Semantic memory is the recollection of facts gathered from the time we are young. They are indisputable nuggets of information not associated with emotion or personal experience.

Declarative Memory

(facts, events)

I know that the US Constitution was signed in 1787.

Episodic Memory

(experiences, events)

I remember the first day I started my job at Valamis.

Semantic Memory

(facts, concepts)

Washington, D.C., is the U.S. capital and Washington is a state.

2. Implicit

UNCONSCIOUS MEMORY

Unconscious memory of skills and habits (motor skills). Memory for a previous event or experience that is produced indirectly, without an explicit request to recall the event and without awareness that memory is involved.

Non-Declarative Memory

(performing skills without recalling)

I know that the grass is green and the sky is blue.

Procedural Memory

(skills, tasks)

I know how to ride a bicycle and play the piano without thinking.

Priming

(stimulus response)

After seeing the word store in one context, a person would complete the word fragment st_r_ as store rather than stare, even without remembering that store had been recently encountered.

Associative Learning

(Classical conditioning aka Pavlovian conditioning)

For example, the word NURSE is recognized more quickly following the word DOCTOR than following the word BREAD.⁴²

Nonassociative Learning

(habituation and sensitization)

After seeing the word store in one context, a person would complete the word fragment st_r_ as store rather than stare, even without remembering that store had been recently encountered.

3. Episodic

EXPERIENCES, EVENTS

Episodic memories are what most people think of as memory and include information about recent or past events and experiences. The recollection of experiences is contingent on three steps of memory processing: encoding, consolidation/storage and retrieval.⁴³

Autobiographical Memory

(“Flashbulb memory” is a vivid memory of an emotionally arousing experience.)

I remember when the Golden State Warriors won their first NBA championship in 1975.

Retrospective Memory

(Recalling anything in the past.)

Remembering what was said in the last chapter of your book.

Prospective Memory

(“Remembering to remember”)

I need to remember to respond to an email.

Thinking in the Long-Term

The conversion of short-term memory to long-term memory requires the passage of time, which allows it to become resistant to interference from competing stimuli or disrupting factors such as injury or disease.⁴⁰

The longer your memory stays in the short-term, the more likely it is to be encoded and consolidated information into long-term memory. Differences in the ability to retain knowledge can contribute to productivity differences across organizations. Microlearning facilitates memory retention in many facets, but we will focus on the many benefits that stem from: Repetition and “Chunking.”

Repeat After Me

The old phrase, “If you don’t use it, you lose it,” rings true, but could be improved by saying, “If you don’t use it or review it, you lose it.” With repetition and the passage of time, you can convert a short-term memory into the more resilient, long-term memory. There is a lot of research that suggests Microlearning improves the act of absorbing and using information.

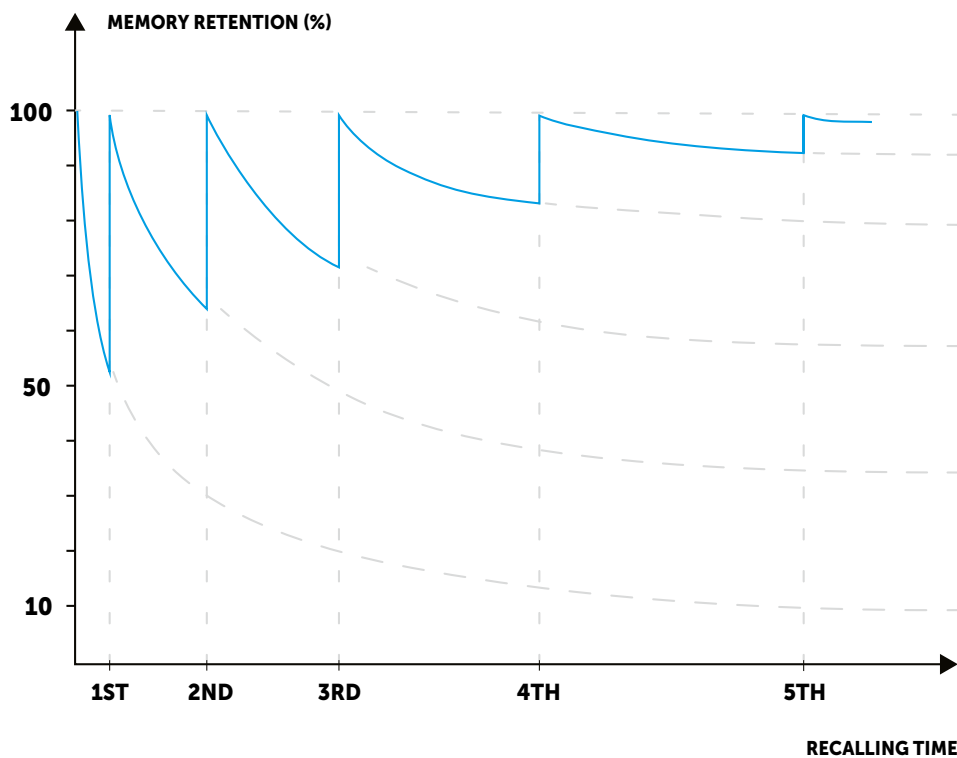
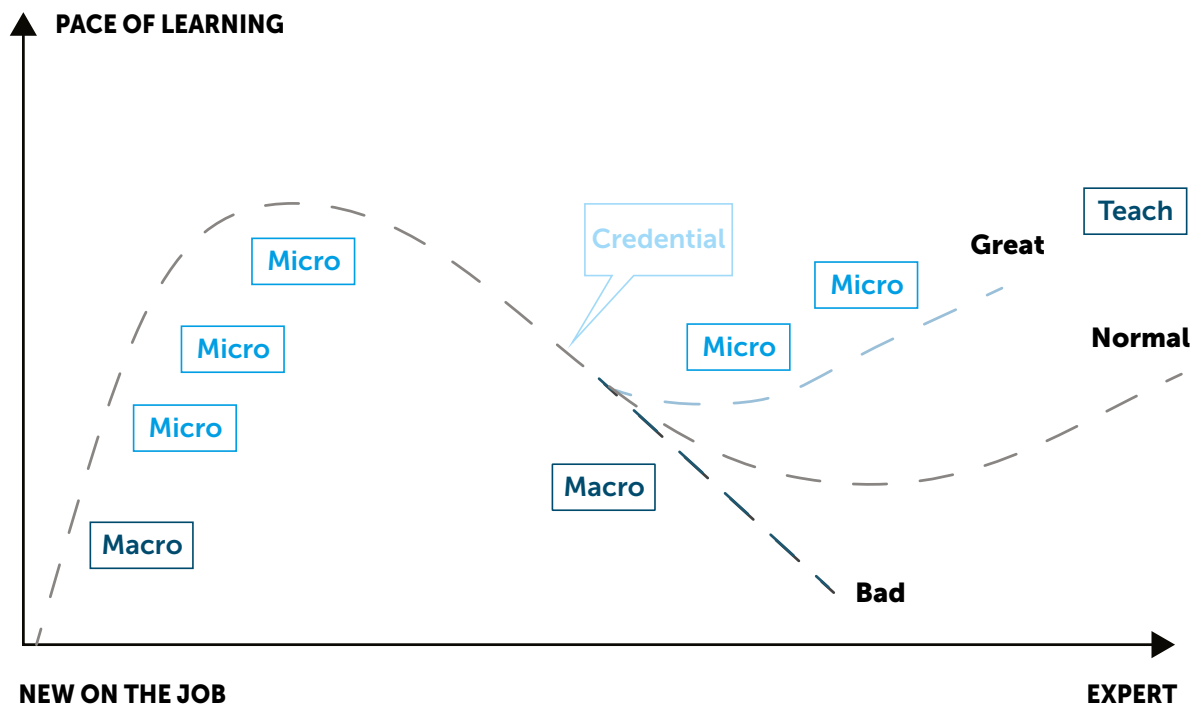


FIGURE 3. In Ebbinghaus' forgetting curve graph shown above, you can see that when someone first learns something, they retain all of that information. As the days pass, memory retention begins to drop. But as you perpetually review information, you retain more and more information.

In the beginning of a new job, we use Macrolearning during the onboarding process to learn our responsibilities, become familiar with the organization's systems, get to know other employees and where we can transfer our prior knowledge. We use Microlearning to learn skills on-the-job. For example, searching the Internet for “how to do a mail merge in outlook,” is an example of Microlearning.



Over time you begin to get comfortable in a job and it becomes more routine, and you become more proficient and you gain new responsibilities, you may begin to want new knowledge to enhance your career, or you might be promoted, which require you to begin Macrolearning again.

Microlearning never stops throughout your career as you learn new skills every day and learn new ways to apply your knowledge. Once you have enough knowledge to be an expert, you can teach others.

Because Microlearning most frequently occurs when people need to apply the knowledge right away, it is stored and encoded in the brain to be more useful, and more likely to be remembered. In other words, Microlearning is often used repetitively, thus the forgetting curve is minimized and short-term memory transitions to long-term memory.

“Chunking Knowledge”

Central to the concept of Microlearning is the length of the content. The content is chunked into “bite-sized” pieces in order to keep the content focused and targeted, which makes it easier for the learner to tackle.

The size of the content also makes it easier to fit into busy schedules, but also makes it easier to create, adjust and give feedback, so organizations can pivot faster. Additionally, shorter content enables the possibility to elevate content personalization and relevance for each individual in their role.

10 | Questions to Ask When Building a Microlearning Strategy



ASK YOURSELF



EXAMPLE ANSWER

Define what business goals you are trying to accomplish and why?

Increase customer retention because losing customers is costing the company money.

What learning objectives will help reach your business goals?

Training that supports improving customer service and customer-centric behavior.

How can you break learning objectives down and chunk content?

IMPROVING CUSTOMER SERVICE CAN BE FURTHER BROKEN DOWN INTO LEARNING OBJECTIVES:

- Building a frictionless user experience.
- How to measure and analyze the customer "pulse" with the Net Promoter Score.
- An intro to design-thinking.
- How to develop your Emotional Intelligence.
- Get to know product and services.
- How to resolve a customer complaint.

How can you make this learning content relevant and valuable to each individual?

HOW TO RESOLVE A CUSTOMER COMPLAINT?

This type of training can leverage scenarios someone might face in their individual role and ask the learner to answer some questions.

What types of learning content will you use? Can you repurpose content? Is there content that already exists that supports your needs?

- Using external MOOCs for emotional intelligence courses.
- Repurposing information from Customer Experience team's slides.

How will you create a culture of learning and motivate employees to learn?

Motivate employees by teaching managers how to coach, and also give value and incentives to people that show growth and improvement. This all contributes to improvement in productivity and performance.

ASK YOURSELF

How will you measure learning results?

DID THEY LOOK AT THE CONTENT?

- How long did they look at the content for?
- Did they go back to content?
- Did they skip content?
- Did they complete lessons?

DID THEY UNDERSTAND THE CONTENT?

- How did they score on assessments?

DID THEY LIKE THE CONTENT?

- Did they give feedback on their level of satisfaction and application of their new knowledge? What did they like or didn't like? Why or why not?

DID THEY TRANSFER THEIR KNOWLEDGE?

- How are you tracking behavioral change?
 - How quickly do you expect to see the changes?
-

How will you analyze learning results?

- What specific learning metrics are you concerned with? Beyond completion and time on site?
 - Can you identify learning patterns that lead to positive and negative business outcomes?
-

How will you measure business results?

- Who are the stakeholders?
 - How do they measure training success?
 - What specific KPIs do they want to influence?
 - Do you have an agreed upon ROI model to understand the impact that learning had on those results?
 - Can you correlate learning behaviors to business outcomes?
-

How will you adjust content based on results and feedback?

- Can you identify patterns that explain if you have high quality content or not (i.e. everyone answering the same question incorrectly may prompt you to audit the content to ensure that the question is worded properly, that the answer is actually in the preceding content, etc.)
 - Does one modality have a greater adoption than others? (i.e. if video gets better engagement than slide decks, maybe invest more in videos and spend less time creating decks)
 - What retrieval practices will you use to reinforce the learning?
 - Are you achieving the desired, measurable behavioral change that the content was intended to create
-

How will you scale?

- Do you have the technology to scale?
 - How will you personalize content further?
 - Will you use recommendations?
 - Will you use AI / Chatbots?
 - Will you allow for learner collaboration to create personal connections with team members/co-workers?
-

11

Microlearning Best Practices Checklist



MICROLEARNING CONTENT ALIGNS WITH BUSINESS GOALS

Your learning strategy should be aligned with the overall business goals of the company. Microlearning chunks should build to a greater and applicable initiative.



DEMONSTRATE KNOWLEDGE IN A VARIETY OF WAYS

Follow up content with multiple choice questions, but also a demonstration of knowledge.



PRODUCTION QUALITY IS SUPERIOR

Everyone can create content, but not everyone has the ability to make quality content and maintain quality over time. Use high quality assets like video, audio and design.



ACCESS ANYTIME ON ANY DEVICE

Give users the option to learn on their mobile devices, at any time of day. Give people the flexibility to learn when they want, how they want, online or offline.



KEEP MICROLEARNING VIDEOS SHORT, TARGETED AND LEAN

Microlearning's strength is in the short and targeted messaging. The longer the video becomes, the more difficult it becomes to utilize while on the go. Keep Microlearning videos no more than 10 minutes per each learning objective.



CREATE A SOCIAL LEARNING ENVIRONMENT

Give users the opportunity to review and create their own content, create discussion boards, etc. Use feedback to improve content.

12

Personalized Microlearning

Prior to the computer and the Internet, there was no way to track whether or not someone read an advertisement in a newspaper, or viewed a commercial on the television.

Companies relied on purchasing information, but could not identify what influenced the purchasing decision. Businesses understood what was purchased but they couldn't pinpoint why something was purchased.

The Internet gave rise to a world of tracking, analyzing, and influencing the buyer journey. With demographic information like your age, gender, location, and other details combined with data like clicks, views, timestamps and purchases, companies can make customer-centric decisions based on customer data and probabilities.

The more information you have, the more accurate your predictions will be (assuming the information is interpreted with minimal bias and the data is accurate). By using data, companies have found methods to personalize and adapt content to better serve individual needs.

What Is Personalization? 3 Examples of Personalization

1. Amazon: Scaling personalization for Millions of Products and People

Amazon was the first company in online retail to achieve one million customers in 1997.⁴⁴ Fast forward 20 years later, in 2017, Amazon shipped more than 5 billion items with Amazon Prime worldwide.⁴⁵ As of 2018, more than half of US households are Amazon Prime subscribers and Amazon CEO Jeff Bezos was named the richest man in modern history with a networth of \$150 billion dollars.⁴⁶

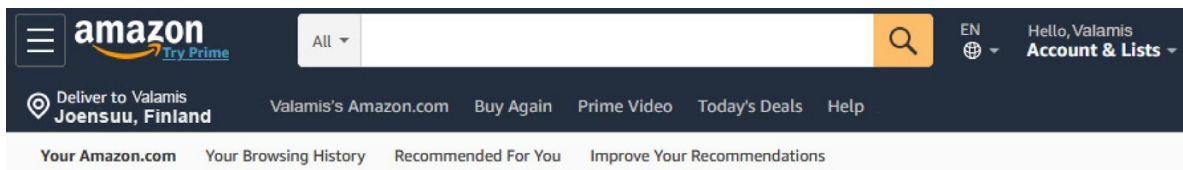
Amazon has mastered the personalized and adaptive customer user experience. Amazon's lead of their Personalization Ventures team stated that their goal is to leverage a deep understanding of customers to provide relevant and timely product, program, and content recommendations.⁴⁷

There is a similar goal with personalized learning, except the goal is to optimize learning and help learners to understand, apply, retain, and even iterate concepts they have learned by delivering relevant and timely content recommendations.

2. Netflix: Curated Serendipity

Just as Amazon personalizes recommendations, Netflix personalizes recommendations from the title to even the artwork for movies and shows. Based on your interests and engagement with certain shows and movies, what you see on your Netflix is curated to provide you with what you are most inclined to watch.

For example, if someone is watching a lot of romantic movies, they may be more inclined to watch a film like Good Will Hunting if the artwork focal point captures the romantic plot.



Microlearning



3. Spotify: Algorithms + Editorial = Algatorial

Spotify uses algorithms combined with human editorial curation. You are recommended playlists and songs based on time of day, previous listening behavior, and other variables.

What Is Personalized Learning?

Personalized learning is learning that is personalized to match the pace of the learner and their strengths and weaknesses. Personalized learning can also include other variables like Personal, Contextual, and Relevant information.



Personalized Learning



RELEVANT

Behavior-based relevance

Topics you gravitate towards, mediums you engage with, other trends in your learning behavior, performance and pace.



PERSONAL

Explicit and implicit preference

What you search for, content you add, or information you browse, what has been learned previously, time of the day, device, demographic data.



CONTEXTUAL

Context of your journey

For example, if you open content through a mobile app your context is most likely "on-the-go."

13 | Adaptive Microlearning

What is Adaptive Learning?

The word Adaptive implies a modification according to changing circumstances. Adaptive learning uses computer algorithms to deliver customized learning resources and activities that address the individual needs of the learner. The learner will have their own learning path, that adapts in real-time based on their performance and engagement in their activities.

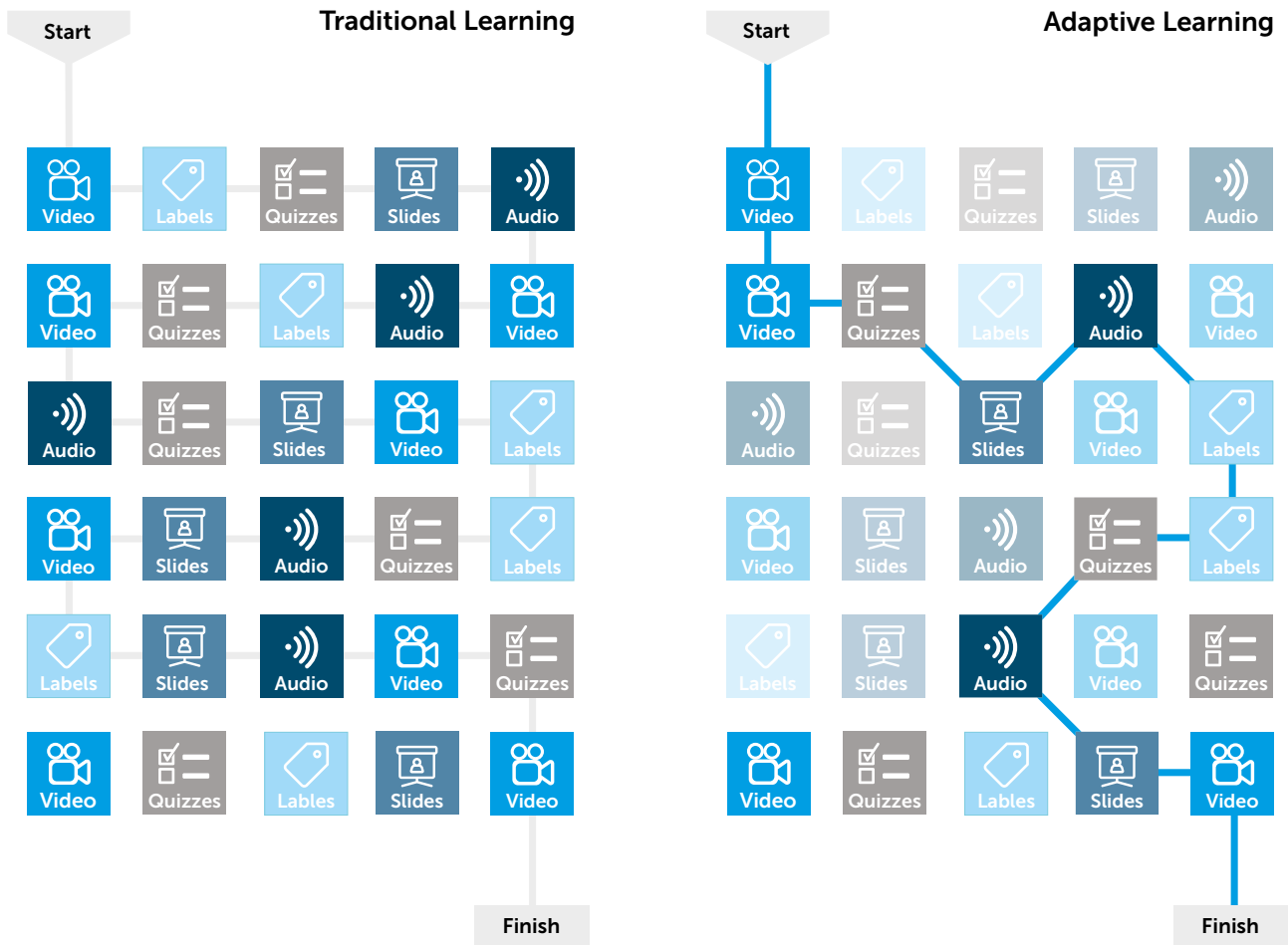
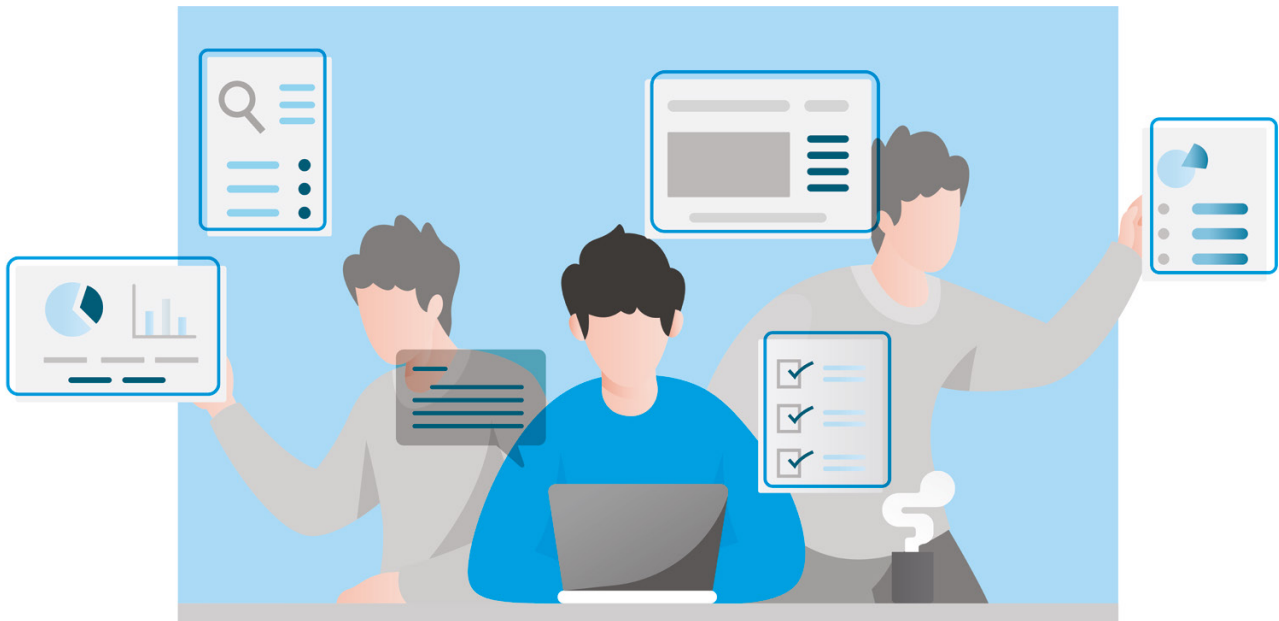


FIGURE 3. Instead of being faced with a traditional linear learning path as your counterparts, where every learner is faced with the same content and resources, your path adapts as you perform, so you can engage with content at your own-pace, in your own way.⁵⁰

Adaptive learning is a technique to provide personalized learning; adapt the learning experience in order to personalize the learning experience. Artificial Intelligence (AI) is a tool used to actively adapt or tailor content. AI used in Adaptive Learning technology draws upon: machine learning, psychometrics, predictive analytics, educational theory, psychology, brain and cognitive sciences.

14 | The Future of Microlearning

The future of Microlearning will be driven towards finding ways to meet the learner right in their moment of need. With the continued progress of adaptive learning, AI, and the methods to further personalize learning, we can potentially deliver learning before the person even knows they need it. Presumably in the future, organizations and individuals alike will strive to learn more effectively in order to complete tasks and solve problems more effectively.



Emerging Technology and Microlearning

Today, we are no longer confined to the classroom due to the advent of technology. In the future, it is possible we will no longer be limited by our own schedules or environments. Virtual Reality will be one channel for more behavioral information that will help curate even more relevant Microlearning learning at all times, regardless of time and space. Promises of Brain-machine interfaces (BMIs) like Neuralink, will change the way we perceive learning altogether; not something we need to make time for, but rather an integrated part of our lives.⁵⁴

Imagine a world where instead of looking at something and googling for information, it appears in your vision - accessing information as natural as your eyesight. This accessibility of information will transform not only the way we learn, but the way we communicate with our peers. As new technology is adopted, new challenges will emerge; fake information, deep fake, and the proliferation of mass information and lack of time.

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