A FoW REPORT ON EMPLOYABILITY AND LEARNING

A report prepared by the Future of Work Research Consortium
FEBRUARY 2017
For more information visit our website www.hotspotsmovement.com

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Our research at the Future of Work has benefitted from the contributions of the following members over the last eight years:

INTRODUCTION

In a changing world of work, remaining employable is becoming ever more challenging. Rapid technological advancements are automating tasks and making skills outdated more quickly, raising fears about the future. In fact, 60% of employees worldwide worry about losing their jobs due to a lack of training and skills[1]. From a business perspective, technology is changing job requirements and therefore the talent profiles employers require. Major shifts are also taking place in the way people learn and in the way employers support their people in developing new skills and competencies. At the same time, investments in corporate training are decreasing in many organisations. With this in mind, it was FoW's ambition to explore employability and learning strategies of the future, asking what organisations will need to do differently to ensure they have access to future-proofed talent and address employee anxieties around employability.

Research Methodology

Literature Review | **Learning in the Workplace Survey** | **Case Studies** | **FoW Masterclass**

Using a multi-faceted research methodology, we identified current and future trends as well as good practices among FoW members and other organisations. To begin with, we conducted an in-depth literature review to identify the trends affecting employability and learning. We then surveyed FoW members in order to understand the current situation and future directions with regard to learning in the workplace. These insights were augmented by a number of in-depth case studies to expand our knowledge of future-proofed practices. Cases can be found in our online library, which is open to all FoW members at *www.fowlab.com*.

This FoW report reflects the insights of our research as well as the practical insights shared by our delegates and expert guest speakers at the Employability and Learning Masterclass, which took place on 7th February 2017.

1. WHAT IS CHANGING?

There are three aspects that are particularly crucial to employability and learning today: first, being employable means not only having the right skills but also about knowing about how jobs in the industry are evolving and being disrupted. Second, as it is near impossible to predict which skills will be important in the future, we must instead focus on what makes skills valuable. Third, technological developments affect not only jobs and the skills we need but also the way we acquire those skills.

1.1 What makes me employable?

For our FoW members, employability is a particularly current issue as technological disruption is moving from production lines to the realm of knowledge workers. In this report, we therefore focus mainly on the employability of graduates. In this respect, employability is commonly defined as a 'set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefit themselves, the workforce, the community and the economy'[2]. What is often overlooked is that such a definition conflates two different aspects of employability: that of gaining employment and that of being successful in a job. In order to gain employment, one must know about jobs. Being successful in a job is about having the right skills and competencies to carry out the role. So employability is as much about having foresight about what jobs will exist and how to apply for them as obtaining the right skills. While higher education institutions are expected to prepare students for their chosen occupations, they are measured by the number of students who find jobs. Due to this dilemma, most universities are therefore offering job-hunting support through career services.

Even for universities, it is becoming more difficult to predict which jobs are likely to persist in a time of rapid technological change and automation. In their study of 2013, Carl Benedikt Frey and Michael Osborne[3] stated that 47% of jobs in the US are at risk of automation. The World Bank's recent update of this work suggests that an average of 57% of jobs across OECD countries are at risk while in China and Ethiopia, this goes up to 77% and 85% respectively. The reasons for this vary from country to country. China, for example, is moving quickly from labour-intensive manufacturing towards higher-tech industries and services. Ethiopia, on the other hand, is at risk because of its agriculture industry. Although it has a large services industry and a burgeoning textile industry, most of its workforce is employed in agriculture, which has major scope for mechanisation.

While these numbers indicate a real risk of many jobs being replaced by automation, it is important to note that many jobs will be only partly automated. In fact, the calculations of Frey, Osborne and the World Bank actually denote how many jobs entail tasks that are exposed to automation rather than how many jobs will disappear. In this respect, routine tasks (both analytical and manual) are much more likely to be automated than non-routine, analytical tasks. Consequently, middle-skill occupations such as manufacturing, processing jobs and clerical occupations at higher risk of automation than carer and customer service occupations, lab technicians and financial analysts[4]. In some industries employment may also grow *because of*

automation. Where automation reduces the cost of a product or service, thereby lowering prices and attracting more customers, employment may increase. According to James Bessen, Lecturer in Law at Boston University, this was the case in the legal industry when the use of electronic discovery software augmented the work of paralegals and lawyers rather than replacing them[5].

New jobs will also arise. iOS Developers, Big Data Architects, Digital Marketing Specialists and Chief Listening Officers are job titles that did not exist little more than five years ago. With this in mind, some more optimistic experts are suggesting that a strong workforce will still be needed albeit with a changing skill set, just as we have seen in the Industrial Revolutions. Staying employable in such an environment means not only developing new skills but also knowing which jobs are being destroyed, which jobs are augmented by technology and which new ones are arising.

iOS Developer

Big Data Architect

Digital Marketing Specialist

Chief Listening Officer

1.2 What makes my skills valuable?

Given the disruption brought about by advances in technology, skills are changing at an unprecedented level. The World Economic Forum suggests that 50% of subject knowledge acquired during the first year of a four-year technical degree may be outdated by the time students graduate. According to Stephane Kasriel, CEO of the freelancer platform Upwork, skills will have to be renewed every five years. Due to the velocity of change, it is impossible to predict exactly which skills will be needed in the future. In the Employability and Learning Masterclass, Professor Lynda Gratton therefore focused on three characteristics that make skills valuable:

Difficult to imitate: Acquiring skills that are difficult to imitate usually means getting a head start compared to others. These are skills that have particular barriers of access or that require particular effort. Sports champions with a wide support base are a good example of people with such skills.

F1 Champion Nico Rosberg

At this year's World Economic Forum in Davos, Professor Lynda Gratton had the opportunity to interview Nico Rosberg, the current Formula One World Champion and an example of someone who has developed skills that are difficult to imitate, rare and hard to substitute. Nico began developing his skills at the age of 6.
During the interview, he emphasised that success in F1 requires the rare combination of technical excellence, extreme physical fitness and the ability to collaborate with a diverse team of car technicians, managers, team mates and coaches. To add to this, Nico speaks three languages, completing his set of skills that are difficult to imitate or substitute.

For the full interview, visit http://bit.ly/2kZzuq1

Rare: Skills are also valuable when they are rare. A current example of this is digital skills. Despite the progress in technology and its integration into the workplace, more than one in four

individuals across 28 EU Member States have no or low digital skills, according to Eurostat's community survey. In addition to this, 60% of European workers perceive their digital skills to be insufficient to apply for a new job[6]. There are substantial differences between countries, however, with Norway, Denmark and the Netherlands demonstrating the highest level of digital skills and Romania, Bulgaria and Poland situated at the lower end.

Building Digital Competencies at Tata Consultancy Services

Tata Consultancy Services (TCS) aimed to train 100,000 of its employees in digital technologies in 2016. In order to fulfil this aim, it built an online learning platform that assesses and develops people's skills in various digital competencies. The cloud-based platform incorporates assessment-based learning, peer-to-peer learning and social learning. By the end of the year, TCS had reached 139,482 people in the organisation, going beyond their initial goal. Over the course of the year, the digital competencies offered on the learning platform also grew from five to 83. As a next step, TCS aims to achieve 100% novice-level digital literacy among its employees.

The full case study is available at *www.fowlab.com*

Skills that are difficult to substitute: As technology takes over most of our routine tasks, future skills will need to be those that are uniquely human. According to the World Economic Forum, for example, social skills such as emotional intelligence and the ability to teach others, content skills such as active learning, process skills such as active listening and critical thinking, and cognitive skills such as creativity will be in higher demand across all industries over the next five years[7].

Future Skills: Creativity

In the Employability and Learning Masterclass, we took a closer look at creativity by speaking to Pip Jamieson, Founder and CEO of The Dots – a platform connecting creative talent with opportunities. Having spent much of her career in creative roles, Pip sees creativity as the secret weapon in a future of automation. Below is a summary of the interview that was conducted by Emma Birchall, Head of Insights and Forecasting at Hot Spots Movement.

Can anyone be creative? Yes - the education system bashes creativity out of us; however, the future is all about asking questions as opposed to knowing the answers.

How can we increase creativity within organisations? Creativity comes from collaborative trust so organisations need to be open to risk. Tech companies like Microsoft (Microsoft Life), Match.com and Tinder have established incubators just to enhance creativity. These incubators look like Willy Wonka-style places but they provide creatives with the best environment.

What is the best way to bring creative talent into established traditional teams?

- Inject new creative thinkers into the organisations intermittently: Make sure you don't put in too many at the same time.
- Try before you buy: Bring in creative talent as freelancers and contractors. But when doing so, articulate the project very clearly so there are no misunderstandings.
- Bring in creatives at a more senior level: Even if you need to invest in their development of business skills, this will change the whole culture of your organisation.
- Create the right culture: Creativity is organised serendipity and failing is part of a creative's work. It is important for organisations to create a culture that gives them the flexibility to do so.

1.3 How is technology affecting learning?

Technological augmentation is already happening in most parts of life. Online videos on Facebook and YouTube help us learn how to bake and cook new dishes. People are monitoring their food intake, personal fitness and their task lists through apps on their mobile phones. Some of these apps provide immediate feedback, allowing people to augment their own self. Smart toothbrushes, for example, are able to give you feedback on how well you brush your teeth and advise you on more effective brushing techniques. There are also math workouts that help you enhance your speed in mental arithmetic. Having access to immediate feedback that we can act upon can help us moderate bad habits and build and reinforce good habits –in essence, it creates feedback loops that help us learn. With the Internet of Things on the rise, technology is changing the way we learn (see The Modern Learner) but it is also changing expectations of how people are developed in the workplace.

The Modern Learner

We have identified three characteristics of the modern learner.

Empowered: When it comes professional development, more people learn outside of work – in the evening or on weekends – than at work. A study conducted by Towards Maturity revealed that 47% of people learn outside of work and 42% at work, indicating a strong commitment to learn.

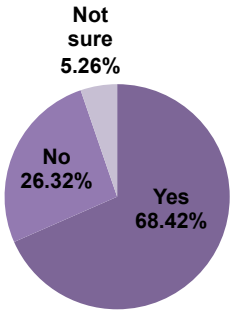
Distracted: According to a study commissioned by Microsoft, the average attention span fell from 12 seconds in the year 2000 to 8 seconds in the year 2015, which is shorter than that of a goldfish. Researchers in Canada surveyed 2,000 participants and studied the brain activity of 112 others using electroencephalograms (EEGs)[9].

Connected: Three-quarters of internet users use social networking sites such as Facebook and Twitter, a Pew Research Center study revealed. Studying internet users across 40 countries, researchers found that while the number of internet users in developing countries was lower than in developed countries, the share of social networkers amongst internet users was higher in developing countries[10]. A study by Kleiner Perkins Caufield and Byers in 2013, furthermore, found that people check their phones more than 150 times a day, revealing the connectedness of the modern learner[11]. These findings are important to consider when it comes to online learning behaviours at work.

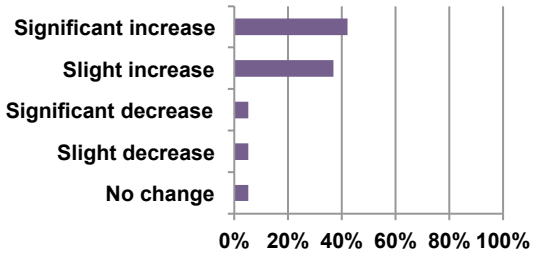
Given how empowered, distracted and connected the modern learner is, the current approach of classroom teaching and only incremental development of skill sets over time will no longer be sufficient. In its place we are already seeing a shift from just-in-case learning towards an approach to learning that has been described as 'just enough, just-in-time, and just-for-me'[12] and which signifies changes in what, where and when something is learnt. Whereas education has largely been attributed to instructor-led teaching in a classroom providing insights that may or may not be needed in practice, the shift emphasises personalised content (just for me) that is short and concise in nature (just enough) and that is accessible as and when needed via a multitude of devices (just in time). According to our own research, on-demand learning that provides content in bite-size pieces will increase substantially over the next years.

Just in time: In our Learning in the Workplace Survey, the majority of FoW members reported that they already have on-demand learning activities in place. The majority also expect this to grow over the next five years (see survey results on graphs below).

Do you currently offer on-demand learning activities?

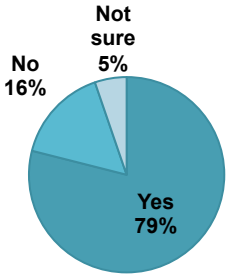


How will on-demand activities change over the next five years?

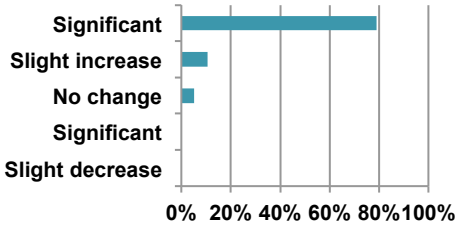


Just enough: FoW members reported that they already offer bite-size learning activities. The majority also expect this to grow over the next five years (see survey results on graphs below).

Do you currently offer bite-size learning activities?



How will bite-size learning activities change over the next five years?



Just for me: As learning management systems become more sophisticated, FoW members are increasingly able to personalise learning to the participant. This means providing more content and materials that are meaningful to the learners through assessments or recommendations. In order to build digital competencies among its employees, for example, Tata Consultancy Services (TCS) created a platform that assesses the current skills and competencies of each learner before unlocking courses that meet the learner's level and needs (*see Building Digital Competences at Tata Consultancy Services Case Study on www.flowlab.com*).

2. WHAT CONUNDRUMS ARE EMERGING?

Technology is affecting the nature of jobs, the skills we need and the way we learn. These changes have created several conundrums, or puzzles, which we explored in our research. The first conundrum concerns higher education. Given how quickly the nature of jobs and required skills are changing, is it still worthwhile? Second, who is responsible for employability and what is the role of the company? And third, how can organisations deal with a growing variety of skills while their training budgets are declining? Below we have summarised these conundrums in more detail:

2.1 Is higher education still worthwhile?

The expansion of higher education means that more people are going to university than ever before. In OECD countries, entry rates are typically higher than 50%. In the UK, 55% of women and 42% of men go to university. In the Netherlands, the figures are 57% for women and 51% for men[13]. As the number of graduates has increased, however, the number of graduates working in non-graduate roles has also increased. According to a recent study conducted by the Chartered Institute of Personnel Development (CIPD), more than half of graduates in the UK are in roles that do not require a university degree[14]. This is because many employers have changed job requirements to include a degree where previously a degree was not needed. This, among other things, has had a negative effect on graduate wages while university fees have steadily increased.

While graduates have been 'colonising' jobs, many employers are unsatisfied with their skills. A recent survey in the USA revealed that while 87% of college graduates felt well prepared for their job immediately after graduation, only half of managers agreed with them[15]. The skills that were lacking most, according to managers, included critical thinking, problem-solving, attention to detail and writing proficiency. When it comes to digital skills, a study commissioned by Barclays UK found that approximately one third of Millennials (18-34 year olds) are worried about being at a disadvantage due to a lack of digital skills[16].

In order to increase the employability of their students, many universities have launched initiatives that help prepare them for the workplace. Manchester Metropolitan University, for example, introduced an employability curriculum framework, which sketches out what is expected of students at particular levels. Students are regularly assessed according to these expectations. Birmingham City University uses a 3D graphical representation of a town to develop and assess real-world skills among students. Some lecturers have also started adapting their teaching methods to incorporate more time for practical exercises and projects.

The Flipped / Inverted Classroom

The flipped classroom is a pedagogical model in which students learn by viewing short videos and lectures before the class. The time in class is then used for discussions, practical exercises and project work. As content delivery is moved outside the classroom and homework-related elements are done in class, the traditional classroom model is inverted. Assessments should be adapted accordingly, such as conducting weekly quizzes rather than a final test.

Despite these efforts, many employers are still biased when dealing with a large number of applicants, often deferring to university reputation or rank instead of skills and experience. In fact, a recent study found that ten years after graduation, graduates of the most competitive colleges such as those in the Ivy League earned up to nineteen percent more than their peers

from other colleges[17]. When the Wall Street Journal (WSJ) conducted a similar study, however, they found the defining factor to be which major a person chose. When it came to graduates with STEM-related majors such as science and engineering, the average earning did not vary much according to college. It was mainly among graduates outside of STEM where higher earnings were dependent on a degree from a top university[18].

So if a college or university degree other than that from a top university cannot guarantee preparedness for the workplace or even a higher wage, is it still worthwhile? Several years ago, many experts believed that the solution to the conundrum of higher education would be Massive Open Online Courses (MOOCs). These were seen as a major disruptor of higher education, providing free education for all. In 2013, however, a study revealed that the average completion rate of MOOCs was only seven percent and that they were mainly taken by students who already held degrees.

Blog: Digital Badges

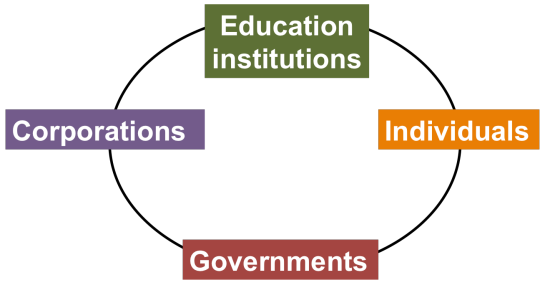
[…] Digital badges are a type of certification for a skill, accomplishment or capability, much like the badges handed out in the military or the Scouts. Universities, online course providers, companies, museums – any learning provider really – can issue badges, which recipients can add to their online profiles like LinkedIn and showcase their skills and capabilities to their peers and potential employers.

For the full blog post, see www.hotspotsmovement.com/future-of-work-blog.html

While the impact of MOOCs was clearly overestimated, their growth has been impressive nonetheless. In 2016, 4,200 MOOCs were offered by more than 500 universities. Between 2014 and 2015, the number of students who signed up for at least one MOOC almost doubled from 18 million to 35 million[19]. In the education sector, MOOCs are supporting the flipped classroom model (see The Flipped / Inverted Classroom) and are used to engage students in peer-to-peer learning. MOOCs also support new avenues for qualifications such as digital badges (see Blog: Digital Badges). They are also widely used in the corporate sector, particularly as a tool that supports the shift towards on-demand learning. In fact, our Learning in the Workplace Survey revealed that 42% of FoW members already offer MOOCs. Among those that do not offer MOOCs, 66% reported that they are aiming to offer them over the next five years. So while the conundrum of higher education persists, alternative solutions are already underway.

2.2 Who is responsible for employability?

The second conundrum is who takes responsibility for employability. Higher education institutions, individuals, employers and governments must all play a part. Higher education institutions are already embarking on measures to enhance the employability of students while workers are taking some responsibility for their own professional development by learning more outside of work than at work. Employers, however, are spending less on training while expecting to receive work-ready graduates from colleges and universities. Externalising skills development to formal education in this way is not enough in today's fast-changing environment, particularly as training is becoming more crucial than ever to stay competitive. Each of these actors must do their share, and are likely to need to work together in multi-stakeholder collaborations that benefit all.

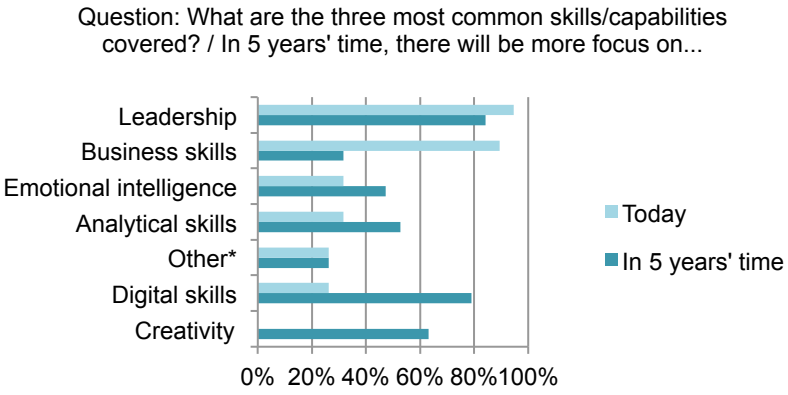


A good example for this is taking place in Singapore. As part of the SkillsFuture initiative, employers spell out expected changes in each industry and identify the skills they will need. The government uses these insights to create 'industry transformation maps', which help guide individuals. In addition to this, the government gives every individual above the age of 25 a S$500 credit for training courses by approved providers including universities and MOOCs. Over 40 year olds also receive subsidies on top of this credit[20]. Another example is Germany, which is renowned for the importance it places on vocational training. Here, companies and unions work together with the Chamber of Commerce and Industry as well as the Ministry of Education in designing and upgrading frameworks for national training guidelines and exams for specific occupations.

In addition to these multi-stakeholder collaborations, some companies are investing in single-business initiatives. In 2015, Google launched its Digital Garage initiative in the UK aiming to boost the digital skills of over 200,000 small businesses over two years. Digital Garages consist of online training as well as pop-up centres around the UK. According to Google, 88% of businesses involved in their events have changed the way they run or promote themselves online.

2.3 How do organisations deal with a declining training budget?

Our Learning in the Workplace Survey with FoW members revealed a third conundrum. For most FoW members, training budgets have been decreasing over the past five years and will continue to decrease or stay the same over the next five years. Meanwhile, the variety of skills that needs to be covered by L&D will grow (see graph) and spending on learning technologies such as online learning tools will increase. Some companies are responding to this conundrum by making use of other budgets for training. Investments for learning technologies, for example, may come out of the technology department's budget. Investments in training are also becoming more cost-effective. Social learning technologies and online learning activities may require an initial investment but are more cost-effective than traditional methods, especially when their content is mainly user-driven. According to FoW members, the most cost-effective learning methods are expected to grow fastest over the next five years.



3. WHAT ACTIONS SHOULD BE TAKEN?

With the changing nature of jobs, skills and learning requirements as well as the conundrums of higher education, responsibilities and corporate training investments in mind, Professor Lynda Gratton highlighted three key actions that organisations must consider. These actions are the result of extensive academic research, insights from Learning in the Workplace Survey and the study of good practices among organisations:

3.1 Focus on lifelong learning

Lifelong learning is crucial to stay employable, particularly as life expectancy continues to increase. Universities such as Harvard are supporting lifelong learning by offering access to MOOCs. Stanford University has also explored the concept of the Open Loop University, in which students do not study a major but declare a mission that guides their studies throughout their lifetime. They can then 'loop in' when they require training and 'loop out' to pursue career opportunities.

As an organisation, focusing on lifelong learning means taking responsibility for people's professional development, no matter their age or tenure. In order to support lifelong learning, organisations should consider the following key actions:

Maintain a culture of learning: This requires fostering trust, providing psychological safety and motivating the workforce to keep learning. While trust is a vital part of all innovation and learning, a psychologically safe environment provides the freedom to fail and improve. Rather than taking the possession of skills for granted, leaders should adopt a growth mindset that focuses on the potential for growth rather than a fixed mindset where people believe their basic qualities, like their intelligence or talent, are simply fixed traits[21]. In the future, companies may also be working with a larger number of contingent workers. In organisations where such workers have been included in the overall learning and development framework, staff morale and performance have been raised[22]. An inclusive approach to a culture of learning is therefore key.

Democratising Learning at Accenture

Accenture has built a Pinterest-style platform of learning boards where people can share the best (internal and external) information and ideas around a certain topic. By empowering its talent to act as subject matter experts and create their own learning boards, Accenture is democratising learning. People benefit not only from the learning boards' bite-sized content but also by being able to use the platform anytime and anywhere. Since its inception in 2014, 2,000 learning boards have been created by 1,250 curators and 18.3 million learning board activities have been completed.

The full case study is available at *www.fowlab.com*

Create an adult-adult relationship: A shift towards just enough, just-in-time and just-for-me learning requires a shift in the relationship between employer and employee from parent-child to adult-to-adult. This means empowering but also trusting employees in defining their skill gap and choosing when, how and what they want to learn. In the Learning in the Workplace Survey, FoW members anticipated a strong shift towards individuals *identifying* as well as *meeting* their own learning needs.

Offer many ways of learning: Myriad past studies have categorised learners into right- and left-brain thinkers and into visual, aural and verbal learners. However, recent insights in neuroscience have demonstrated that the two hemispheres of our brain work together and communicate extensively and that we use our left hemisphere as much as our right in learning[23]. Psychologists have also revoked the idea of preferred learning styles[24].

Play a supporting role: Traditionally, organisations told employees what, when and how to learn. With the rise of on-demand and personalised learning, organisations will play a more supporting role. This means shifting from providing content to creating a learning environment and providing the right tools that allow individuals to define their own learning. Building a narrative around learning, for example through the use of digital badges, can also help employees along their learning journeys.

Promote social and collaborative learning: Value in future will be the result of teams that are able to learn from each other and combine ideas. This can be promoted through social learning technologies as well as through collaborative learning techniques such as improvisation (Improv). Improv is increasingly popular as a way of relearning the behaviours that enable this to happen (see Improv: Collaborative Learning Agility).

Improv: Collaborative Learning for Agility

At the Employability and Learning Masterclass, Steve Roe and Max Dickens from Hoopla facilitated an Improv session. Describing it as "yoga for your soft skills", they took delegates through a series of short partner and group exercises that were based on three simple rules:

Listen to offers: Move your focus from 'how am I performing' to 'what can I learn from the other person/people in this scene (team)'.

Accept offers (yes, and): Accepting every offer increases your ability to explore someone else's view of the world. We already know what's in our own heads, the interesting thing is what we can learn from the other person.

Make the other person look good: This is the real purpose of a team and the only way to move from superstars (who learn very little from each other) to a high performing team who use collaborative learning to incorporate mistakes and build on each other's greatness.

3.2 Embrace all dimensions of employability

For organisations, enhancing employability has usually meant working with governments and education institutions to spell out future skills requirements and offer work experience for students. But employability goes beyond having the right skills. It is also about knowing about jobs. Employers should therefore not only support the development of skills but also take measures to make jobs known.

Deutsche Bank, for example, recently used social media to raise awareness of jobs and reach out to potential hires. In 2016, the bank started looking at students in certain clubs and societies across universities in the UK. It then used publicly available social media to build a profile of the students it wanted to target. Social media made it easy for the Deutsche Bank to approach people and teach them about the bank as well as available jobs. The initiative allowed Deutsche Bank to make its jobs known but also to identify 400 potential hires, many of whom were not

actively looking for a role in banking[25]. Other organisations have started making jobs known through public competitions and online talent platforms. Particularly companies hiring technical talent such as coders use publicly posted competitions or challenges through platforms such as Kaggle. This allows them to assess potential candidates but also to reach thousands of further potential candidates. Online talent platforms such as The Dots or Freelancer.com have also increased in number over the past few years. McKinsey Global Institute estimates that up to 540 million people could benefit from such platforms by 2025[26].

While making jobs known is an important aspect of employability that organisations should embrace, there are also new ways of supporting people in acquiring the right skills. IBM, for example, brands and accredits internal and external talent through its Open Badges platform. It has thereby created a global pool of talent that it can draw upon. The platform also contributes to the learning of internal employees. According to IBM, employees who feel recognised for learning achievements (e.g. through badges) are three times more engaged than those who do not feel recognised[27].

3.3 Reap the benefits of technology

In order to support the modern lifelong learner, L&D must ensure it reaps the benefits of technology. Technology is not only offering new ways of learning predefined content, for example through micro-learning, but also facilitating new ways of learning with and from each other, for example through social learning. In addition to this, augmented and virtual reality technologies are becoming increasingly geared towards knowledge workers. They will offer companies new opportunities of engaging its workforce over the next few years. Below is a description of the key learning technologies that organisations should embrace:

Micro-learning: This usually consists of short videos that provide content in bite-size pieces and that can be accessed via variety of devices. FoW members rated this as something that most of them could do better.

How to Make Micro-learning Work

At the Employability and Learning Masterclass, Gerry Griffin, CEO and Founder of the micro-learning company Skill Pill, provided several tips on how to make micro-learning work:

Use micro-learning to reinforce knowledge: Within six weeks, only 15% of a corporate learning event is retained while 85% is forgotten. Micro-learning allows learners to return to specific components of the event and reinforce their memory as and when needed.

Tag to events: Simply slicing and dicing larger chunks of information will not engage learners. Instead, ensure that it is clear how the information is useful. Tagging micro-learning to events, for example, helps learners understand the context and relevance.

Push onto mobile technology: Considering that we check every phones over 150 times a day, enabling micro-learning on mobile technology is vital. It gives learners a more active role in learning when and where it suits them best.

Assess the relevance: Rather than assessing how much people learnt, ask how relevant something was to the organisation and the individual. Any feedback needs to result in adapting the content.

To view the presentation, visit www.fowlab.com

Blended learning: Combining face-to-face learning with online learning activities is among the three most popular L&D methods of FoW members. Most FoW members also perceive themselves to be very good at blended learning.

Gamified learning: At the most general level, gamification can be described as the application of motivational game elements to non-game situations. In the context of learning, gamification is particularly effective as it triggers neuro-chemicals such as dopamine (also called the pleasure drug), which is released in anticipation of receiving a reward. Dopamine creates a higher motivational state, fuels engagement and increases neural connections, which allow learning to take place.

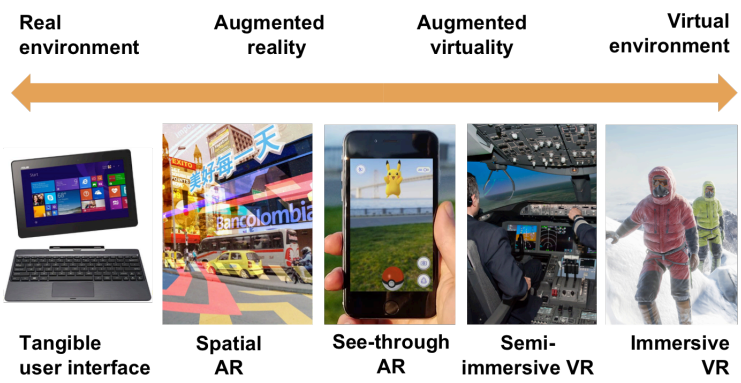
Social learning: Social learning is fundamentally different to current learning management systems in that it allows users to take control over the content and interact with each other in sharing and exchanging content. Research has shown that retention rates are highest among learners that teach others[28] and social learning technologies such as Westpac's Learning Bank provide an environment for this to take place (see Learning Bank at Westpac).

Learning Bank at Westpac

Westpac is rolling out its social learning platform, the Learning Bank, to 40,000 employees after a trial run demonstrated a high demand for the tool. The Learning Bank allows employees to share knowledge and learning material from internal and external sources with each other. While L&D curates some material, employees play an active role in co-creating content. The platform is also connected to Yammer, allowing people to build communities around a learning module and mentoring each other.

The full case is study available at *www.fowlab.com*

Virtual and augmented reality: Virtual and augmented reality are part of the mixed reality continuum (see figure on the right) which includes a tangible user interface on one end and a fully immersive VR experience on the other. Virtual and augmented reality are already enabling people to learn in the most engaging and immersive way. In the Masterclass, Ron Edwards from Serious Games International explained that VR tools are best used for practicing on-the-job situations while augmented reality can help performance support and coaching. The Royal College of Surgeons Ireland's medical training simulator, for example, helps medical professionals and trainees simulate the management of a patient following a road accident. At ThyssenKrupp, the Microsoft HoloLens allows elevator service technicians to visualise and identify problems ahead of a job and have hands-free access to expert information when on site. At the Masterclass, delegates were able to trial the Microsoft Hololens, the HTC Vive (see photo on the left) and Samsung's Gear VR. As VR and AR tools are increasingly geared for knowledge workers, most FoW members agreed that they are something they will need to look into over the upcoming years (see also Learning in the Workplace).



Learning in the Workplace

At our Masterclass, delegates worked with team members to assess the current reality of learning in their organisation. Focusing on eight different learning methods and tools, they discussed what they are very good at, what they could do better and what they need to start doing. The activity revealed that most Consortium members perceive themselves to be particularly good at blended learning, that most members could do better with regard to online learning including MOOCs, and that most felt that they should start using (or looking into) virtual and augmented reality for learning and development.

	Blended learning	**Collabo-rative learning**	**Social learning**	**Online learning incl. MOOCs**	**Micro-learning**	**Gamified learning**	**Virtual reality**	**Augmented reality**
WHAT WE ARE VERY GOOD AT	TCS Mars Abbott Accenture British Red Cross Rabobank ABN AMRO	TCS Mars Novartis Vodafone Audit Scotland	TCS Mars Novartis Rabobank Audit Scotland	Abbott Accenture ABN AMRO	Audit Scotland Accenture	Accenture		
WHAT WE COULD DO BETTER	Novartis PepsiCo Fujitsu Linklaters Vodafone Audit Scotland Save the Children	Abbott PepsiCo Fujitsu Accenture ABN AMRO British Red Cross Save the Children	Accenture Vodafone British Red Cross ABN AMRO	TCS Novartis Mars PepsiCo Fujitsu Rabobank British Red Cross Audit Scotland Linklaters Vodafone Save the Children	Abbott Novartis TCS Kokuyo Vodafone Rabobank ABN AMRO Save the Children British Red Cross	TCS Mars PepsiCo ABN AMRO Linklaters		
WHAT WE NEED TO START DOING	Kokuyo	Rabobank Linklaters	Kokuyo Abbott PepsiCo Save the Children Linklaters	ABN AMRO (MOOCs)	Mars PepsiCo Fujitsu Linklaters	Novartis Abbott Rabobank Save the Children Fujitsu Vodafone British Red Cross Audit Scotland	Novartis TCS Abbott Accenture Mars PepsiCo Rabobank Fujitsu Vodafone Audit Scotland British Red Cross ABN AMRO	TCS Abbott Accenture Rabobank PepsiCo Fujitsu Save the Children Vodafone Mars Audit Scotland ABN AMRO British Red Cross

10 KEY TAKEAWAYS FROM THE MASTERCLASS

The Employability and Learning Masterclass brought together our extended primary and secondary research as well as the insights of a variety of guest speakers. In the final session, delegates were asked to spell out their key takeaways from the day summarised as follows:

1. **Be more transparent with employees regarding the future of jobs:** Create foresight not only for strategic purposes and manpower planning but also to ease anxiety among employees about the future.
2. **Encourage individuals to identify missing skill sets and their own learning needs:** Employees should be encouraged to play an active role in deciding how they need to up- or re-skill.
3. **Create a learning culture that focuses on 'pull' learning:** People learn faster with higher retention rates when they see value in the content and are able to use the tools that suit their preferences. While traditional L&D focused on push learning, making these decisions for the learner, pull learning allows individuals to identify and meet their own and development needs.
4. **Shift the role of L&D from broker to enabler:** As the modern learner becomes more empowered in identifying and meeting their own learning and development needs, the role of L&D needs to shift from acting as a broker between employees and learning to becoming more of an enabler of learning. This involves building an adequate learning environment, providing the right tools and curating content.
5. **Build a narrative around learning:** There is an institutional lag when it comes to building foresight about the future of jobs and skills. Building a narrative around learning, for example through the use of digital badges, can help individuals create a learning journey that guides them into the future.
6. **Trust crowdsourced curation:** Organisations should move away from a command and control approach and instead trust their employees in identifying and meeting their own learning and development needs. This engages the modern learner and allows L&D to understand what is important to employees.
7. **Do more to push micro-learning onto mobile:** In his presentation on micro-learning, Gerry Griffin emphasised the importance of making this available to employees anytime, anywhere. This only works when pushed into mobile technology such as phones and tablets.
8. **Look at all L&D solutions – and keep up with technology:** New learning technologies are developing quickly. Organisations that keep up with technology and build a reputation as a learning organisation are likely to attract the best talent.
9. **Instigate regular learning reviews:** Asking individuals what was useful rather than what was learnt will ensure the value and relevance of learning and development activities.
10. **Be proactive as an employee:** Ask yourself what skill set you will need for a job over the next 10 years and if you identify a gap, be proactive in addressing it, particularly as missing skill sets may be seen as a weakness.

CONCLUDING REMARKS

Employability and learning is growing in relevance and importance, both for individuals and organisations. Particularly as life expectancy increases and careers expand, individuals must ensure they remain employable through lifelong learning. Organisations cannot merely rely on education institutions to impart the skills and knowledge that individuals need in a landscape of changing jobs and skills requirements. Instead, organisations must ensure they provide an environment where people can develop. Organisations that invest in their people, independent of their age, tenure or contract, are likely to attract the best talent. However, our primary research as well as the Masterclass revealed that FoW members are at different stages when it comes to learning in the workplace. The Masterclass provided a timely opportunity for FoW members to share insights and learn from each other. Over the course of the day, it became clear that a shared challenge among most of our FoW members is to develop a culture of learning that trusts and empowers the modern learner and that embraces technology.

ABOUT THE FUTURE OF WORK RESEARCH CONSORTIUM

Over the coming decades, the world will be transformed by the host of emerging technologies that are shaping our interactions with work and connecting us with each other in ever more sophisticated ways and across ever more parts of the globe. These technological developments will play a continuous role in linking the regions of the world together as the force of globalisation brings goods, services, and indeed jobs to ever more areas of the world.
- Lynda Gratton, Professor at London Business School and founder of the Hot Spots Movement

Over the last eight years, the Future of Work Research Consortium (FoW) has brought together a global community of more than 100 of the world's most influential companies. By combining energetic live events with cutting-edge collaborative technology, we have connected more than 500 executives, all of whom are leading their organisations in preparing for the future.

FoW is widely acknowledged as one of the most innovative and collaborative forums for exchanging insights, models and concerns about the future of work. Led by Professor Lynda Gratton, FoW unites academic research and organisational practice to deliver a unique multidisciplinary experience. Members of the Consortium benefit from access to the very latest academic research and practical insights and have the ability to learn and develop in a way that is customised to their needs.

For more information on any of the topics explored in this report, please contact the Research team:

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APPENDIX

FUTURE OF WORK RESEARCH CONSORTIUM
LEARNING IN THE WORKPLACE SURVEY – OVERALL RESULTS

Introduction

Aim:
The aim of the Learning in the Workplace Survey was to identify current trends and future directions among FoW members.

Methodology
FoW members completed the multiple-choice survey in Q4/2016. We recommended that the survey was completed by a senior member of the Learning and Development (L&D) function in cooperation with colleagues in L&D and other departments.

Participation
19 companies across nine industries participated in the survey, revealing the diversity of businesses and perspectives in the Consortium.

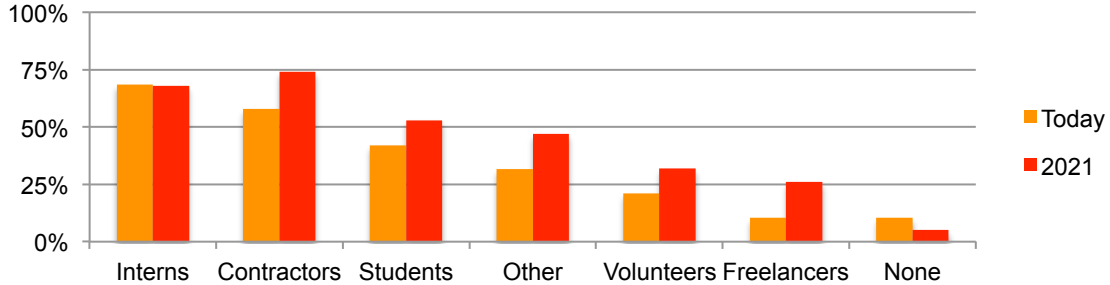
Report
This report highlights the key insights from the survey. For your individual results, please contact info@fowlab.com.

L&D FUNCTIONS

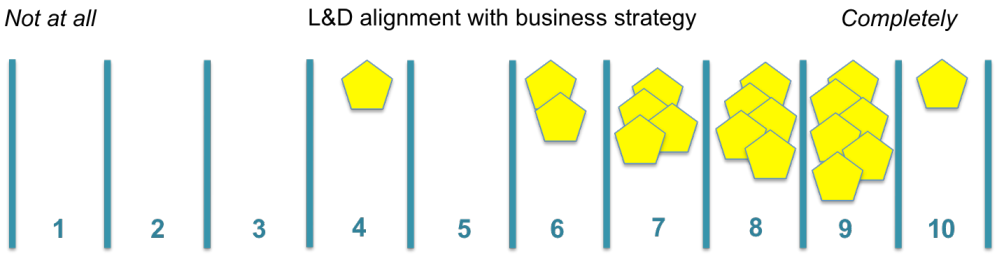
1. **FoW members' L&D functions are responsible for between 300 and 384,000 members of staff across all world regions.**

2. **The role of L&D functions is shifting from curriculum developers to strategic business partners.**

3. **Over the next five years, FoW members anticipate providing more L&D to non-employee groups. There will be a particular rise in L&D for contractors and freelancers.**



4. **Learning and development activities among FoW members are strongly aligned with their business strategy.**

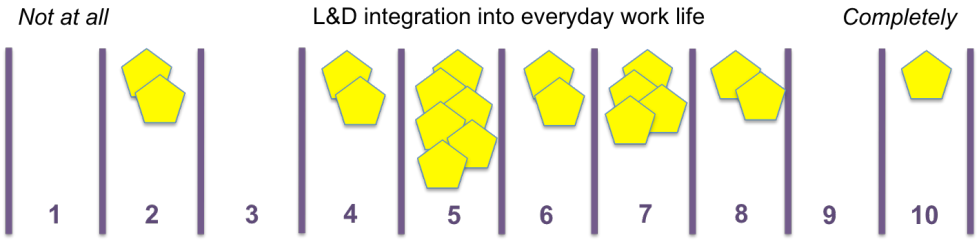


= FoW members

The top five barriers to an alignment with business strategy, according to respondents, are:

- Budget/resourcing constraints
- Time constraints
- Client-first nature of the business
- Culture and behaviours
- Strategic planning

5. **Learning and development activities among FoW members are somewhat integrated into everyday work life.**



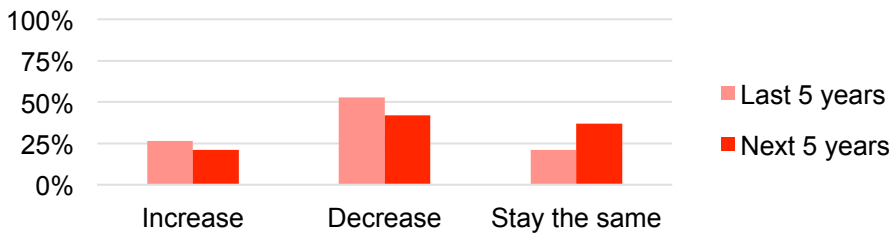
= FoW members

The top five barriers to integrating L&D into everyday work life are:

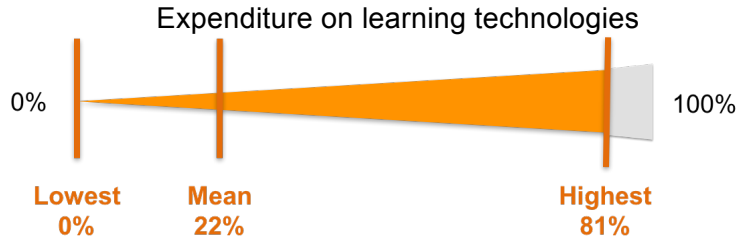
- IT/technology
- Learning mindset/culture
- Engagement
- Workload pressures
- Management skill/awareness

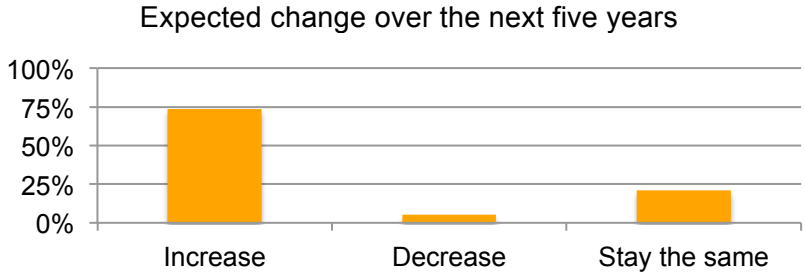
TRAINING BUDGETS

6. **Training budgets among most FoW members have decreased over the last five years and will either stay the same or continue to decrease over the next five years.**



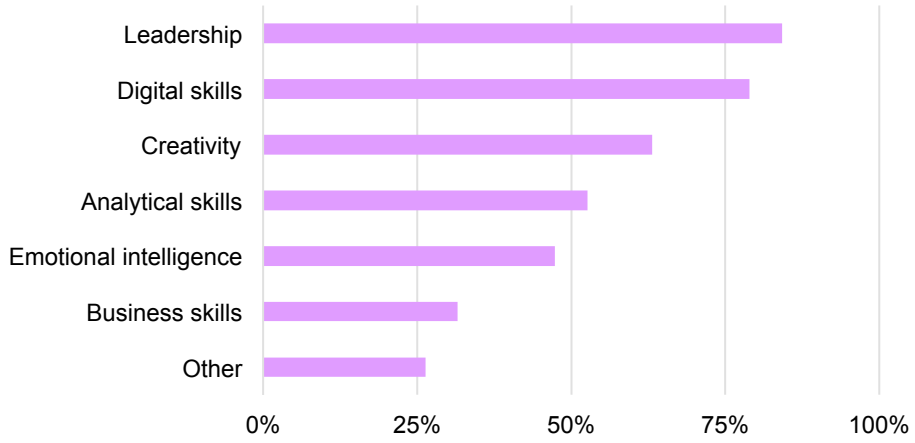
7. **FoW members spend between nil and 81% of their training budget on learning technologies. The investment in learning technologies is expected to increase over the next five years.**
   Please note: While this question focused on the L&D's training budget, investments into learning technologies may come out of other budgets as well.





SKILLS AND CAPABILITIES

8. **The variety of skills covered by L&D will increase, according to FoW members, with a particular focus on leadership skills, digital skills, creativity and analytical skills.**



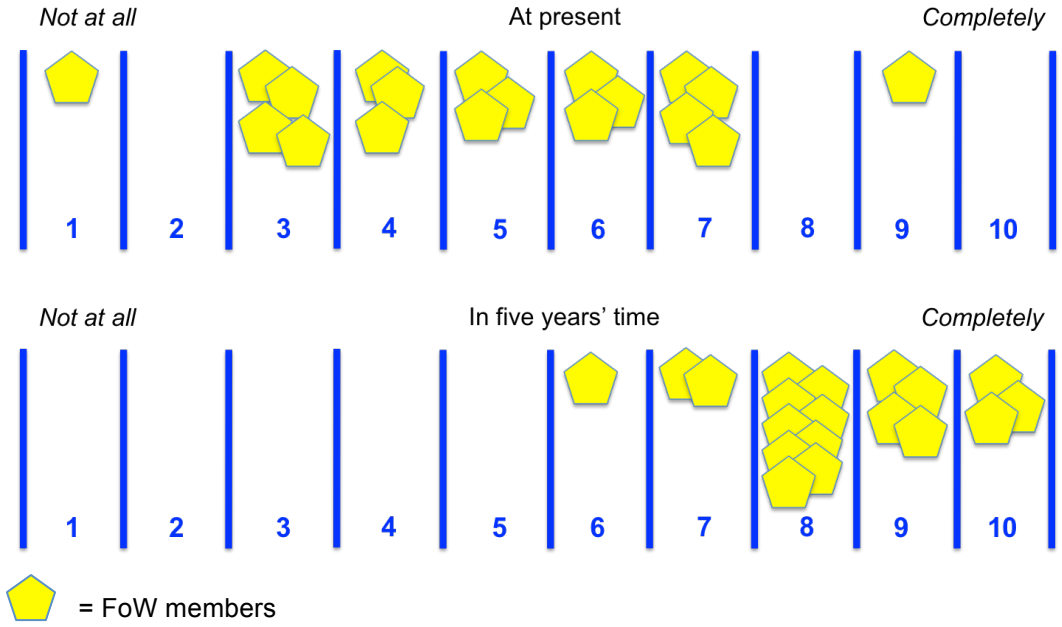
CATERING TO THE NEEDS OF THE MODERN LEARNER

9. **68% of FoW members already offer on-demand learning activities. The vast majority expect an increase in such activities over the next five years.**

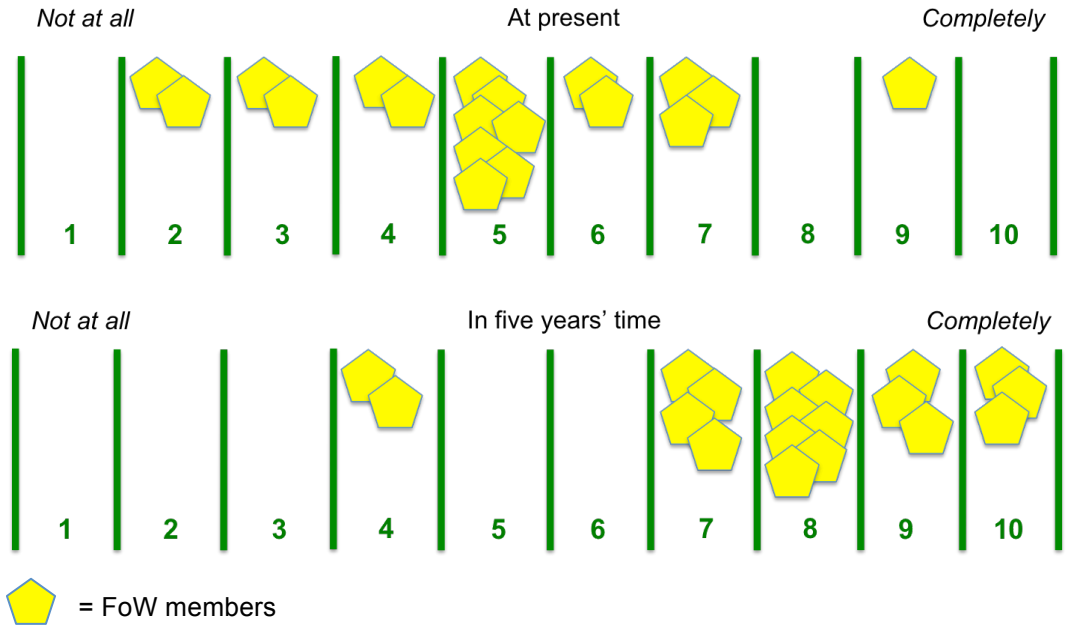
10. **79% of FoW members already offer bite-size learning activities. The vast majority expect an increase in such activities over the next five years.**

WHO IS RESPONSIBLE FOR LEARNING?

11. FoW members anticipate a strong shift towards individuals identifying their own learning needs.

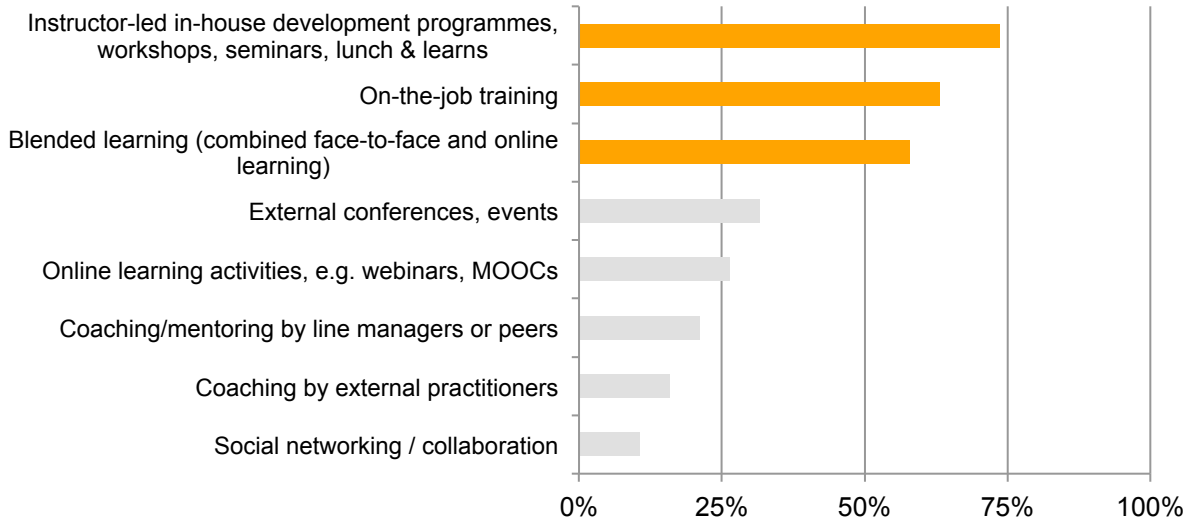


12. FoW members also anticipate a shift towards individuals meeting their own learning needs.



LEARNING METHODS

13. The three most popular L&D methods among FoW members include both formal and informal L&D methods.



14. The majority of FoW members agree that informal L&D methods will grow over the next five years while formal methods such as instructor-led training, external conferences and coaching by external practitioners will decline.

15. FoW members expect the following L&D methods to arise over the next five years:

- Social learning
- Gamified learning
- Artificial intelligence-assisted learning
- Virtual reality-enabled
- Augmented reality-enabled

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