

Transforming the Workforce for the Future

Sharing AEP Germany Trip Learning

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Industry 4.0 (I4.0) was coined as a strategic initiative to establish Germany as a lead market and provider of advanced manufacturing solutions. It sets the momentum for a new industrial revolution, the Fourth Industrial Revolution, driven by the convergence of computing, data, artificial intelligence and universal connectivity.

Digital transformation is not about removing people but making operations safe and effective. It impacts how work tasks are performed and redesigned to meet the future workplace. Is the workforce ready for the transformation?

The adoption of automation is transforming the workplace. It changes the way we work and the way we live. With today's technological advances, science fiction has become a reality in the workplace. Companies are increasingly automating the production lines and core business functions. Robots and computers are performing a range of routine predictable physical work activities better than human. Technology has made it possible for workers to collaboratively with robots as part of their everyday activities. Job profiles and skills requirements are reviewed and changed to equipped the workforce with the emerging skills in demand for the new value-creating roles.

As workers are freed from tasks that are easy to automate, they will be expected to take on more complex tasks. This raises more questions to be answered . . . "Can we transform the workforce for the future? How do we prepare the workforce for the future?"

This paper focuses on providing an insight on how we can promote to create a learning culture, apply workplace learning pedagogies and embrace blended learning to align with the expectations spelt out in the Education (Training and Adult Education) Industry Transformation Map.

An Overview

Three industrial revolutions have passed and now the Fourth Industrial Revolution, Industry 4.0, has emerged to change the world of work. It is not about investing in new technology and tools to improve manufacturing efficiency. It is about revolutionising the way business operates and grows.

It revolves around productivity, seamless communication of data, automated workflow and digitisation of operational processes including product service offerings. Leveraging on these capabilities will enable organisation to adapt and cater to the changing market demand and offer new product and service experiences to customers.

Organisations are integrating digital technologies to transform not only their business structure and operations but also their workforce capabilities. Workforce need to beef up their capabilities and be prepared for more value-added responsibilities.

The adoption of automation and technologies will foster significant changes on how workers perform their jobs. Job profiles and skills requirements will be created while some jobs will become obsolete. Simple, repetitive tasks as well as routine cognitive work will be standardised and performed by machines. The question is . . . How did the Germany prepare its workforce for the future?

An insight from the Germany Trip illustrated “many voices, one mind” approach. All stakeholders within the system demonstrate strong commitment and cooperation towards achieving a common goal for the benefit of the country, organisation, social and self.

The government created a coordinating body that brings together stakeholders defining a national strategy for Industry 4.0 and best practices, promoting the successful implementation of Industry 4.0 to generate growth and create new employment opportunities as well as to help industrial sectors, especially the small and medium size companies, to realise the full potential of the smart factory. the long-term strategy.

Education systems provide broader skill sets and job-specific capabilities as well as soft skills for the emerging roles required for Industry 4.0, close the IT skills gap and offer new formats for continuing education aimed at building capabilities.

Companies put in place continuous lifelong programmes to retrain and upskill workers with specific job-related skills not only through workplace learning and classroom learning but also online competency-based learning. Recruitment is focused on capabilities rather than qualifications. In addition, companies engage in Strategic Workforce Planning which systematically gather baseline information relating to all employees and categorise the various types of employees into job families.

A Culture of Workplace Learning within the Organisation

An interesting insight from the Germany trip is the mindset shift in coping with the reality of the changing landscape by instilling a culture of lifelong learning throughout the organisation and providing continuous learning for its workforce. Daimler AG, parent company of Mercedes Benz, adapts its corporate culture to embrace innovation, instil integrity and cultivate lifelong learning as part of its '5C' Strategy.

The question is . . . what is culture? Described by anthropologists and other behavioural scientists, **culture is the full range of learned human behaviour patterns**. Edward B Tylor, an English Anthropologist, mentioned in his book "Primitive Culture" (published in 1871) that culture is "that complex whole which includes knowledge, belief, art, law, morals, custom and any other capabilities and habits acquired by man as a member of society.

Culture is a powerful human tool for survival but it is a fragile phenomenon too. Our written languages, governments, processes and man-made stuffs are merely the products of culture which made through cultural knowledge and skills.

Workplace learning is as old as medicine itself (Tim Dornan, 2012). Learning at workplace develops workers through doing the work. This development leverages on learning moments that happens naturally in the workplace on a day-to-day basis that go unnoticed and unrecognised. Thus, the article would focus to create a culture that learning and working are integrated with immediate behavioural change.

However, there is a big gap in the generational makeup of the workforce, which has profound impact for our learning. Baby Boomers will be retiring in large scale where huge amount of institutional knowledge and skills need to pass on and retain. Millennials and Gen Z will form 60% of the workforce by 2020, and they expect an employer that can develop them for the future and incorporate a world class learning with sophisticated workplace learning cultures and learning technologies into their every-day work (Future Workplace Research, 2016).

The learning is in an open space where changes are taking place so quickly with most knowledge and resources, and the best practices are in peoples' heads or in their email inbox. So, what would a world-class learning organisation look like? How can organisations start developing a learning culture of their own?

The critical aspect now is very clear for every organisation that learning and practices need to become a world-class workplace learning.

The basis of any world-class learning organisation is an embedded workplace learning culture. Thus, scheduled learning or sophisticated social learning systems would not initiate an organisation to develop a learning culture. This implies that the organisation recognises and values growth as well as excellence and supports people in being self-directed with Heutagogy in their learning.

An organisation with a workplace learning culture is where leaders openly share their mistakes and reflect as part of a learning journey. Where performance reviews are not just once a year but rather just one component of a continuous conversation around development. Without a culture of learning, organisations are unable to create a workforce, which has profound implications for learning.

Organisations are unable to sustain the dialogue after meaningful learning experiences. If an organisation wants to build a learning organisation, you need to focus on this component first. Aside from building a learning organisation, organisations need the right learning for their workforce. Increasingly, companies also want to ensure that workplace learning is designed to facilitate relationship-building, not just learning. Then more and more of the workforce is virtual and globally connected digitally. Skills building remains the primary goal, but emotionally impactful learning experiences are the new standard in building a learning organisation.

Once the initiative changes and people realise the learning is targeted and actionable, the entire workforce will make developing a learning culture a greater priority. The reality is that most people are eager for high-quality learning but are often disappointed by the learning content that is actually delivered. If you can change the reputation of the learning programmes, your organisation will become known for its approaches learning.

Finally, the component of becoming a world-class workplace learning culture is the most difficult to master, embed and champion. On-demand learning is the way of the future, but it requires the entire workforce to generate and curate knowledge and as a part of their daily routines in order to continue developing a learning culture. The future of on-demand learning goes beyond an LMS . . . it means finding a system that is as easy to use as Facebook where everyone can leverage it. With an intuitive interface and leadership

support, you are able to create a platform that ensures everyone can maintain learning both inside and outside the classroom.

Aside from making sure the platform is as easy to use as Facebook, the most important thing organisations can do when developing a learning culture is find a way to recognise the benefits of this platform. Everyone knows that only what is measured is rewarded and the best-in class workplace learning cultures tie continual learning to performance reviews and compensation. The expectation should be that everyone contributes and shares knowledge from their area of expertise so that the workforce has the best information possible even as the market changes rapidly.

When companies talk about what it would take to start developing a learning culture in order to become a truly world-class learning organisation, the subject of technology comes up and considerations around cost and usage will derail the conversation. There is no question that finding and embedding a social learning system is extremely difficult. However, once your organisation has a culture of learning and top-notch learning programmes, the natural next step will be to find ways to sustain the conversation and share expertise.

Learning is not an isolated event, it is fostered and encouraged by every other aspect of the organisation when developing a learning culture. It is possible for organisations to learn as quickly as the world is changing, and leaders have to be confident in painting a picture of the future of learning and in supporting the high-tech and low-tech components of the future landscape.

Learning culture is a conceptualisation to capture values and meanings of learning in organisations.

Workplace Learning Pedagogies to Deepen and Upskill the Workforce

Adopting today's technology does not replace jobs. Only a small percentage of jobs can be fully automated by adapting current technologies, but most jobs have at least some work activities that would be automatable. The challenge is to ensure the workforce is equipped with the relevant skills needed for the new emerging role.

The 2016 Pew Research Centre survey on the State of American Jobs indicated that 87% of workers believe it will be essential for them to get training and develop new job skills

throughout their work life in order to keep up with changes in the workplace. But, is the workforce prepared for the digital transformation? Will the well-prepared workforce be able to keep up with the pace of technological advancement?

The rich experience witnessed from the Germany trip have shown the jobs are not fully replaced but it is the work activities. Companies like Mercedes Benz (Daimler), Deutsche Post DHL, Phoenix Contact and Festo have retained the number of workers even with the integration of automation and technologies in the workplace. Workers are retrained and upskilled to perform higher-value work activities through continuous lifelong learning.

Lifelong learning should encompass the whole spectrum of formal learning, non-formal learning and informal learning (EU Commission 2001, Making a European Area of Lifelong Learning a Reality, p3).

1. Formal learning occurs as a result of learning experience in an organised and structure environment (such as in an education or training institute or on-the-job) structured learning objectives, learning time and support which leads to certification. It is intentional from the learner's point of view.
2. Non-formal learning comprises of structured learning activities that take place outside the formal education system and does not result in a certificate. It is intentional from the learner's point of view.
3. Informal learning results from daily life activities related to work, family or leisure. It is not structured (in terms of learning objectives, learning time or learning support) and typically does not lead to certification. Informal learning may be intentional but, in most cases, it is non-intentional.

In preparing the workforce for the digital transformation, the organisations are faced with the challenge to engage and train the modern workforce. A study from Deloitte pointed out that two-thirds of the modern workforce complained of the lack of time to do their job. They are overwhelmed, easily distracted and very impatient. Though they learn as needed, anywhere, anytime, 93% prefer to learn on the job. Modern workers are keen to develop skills and want to be empowered to take learning into their own hands.

Based on LinkedIn 2018 Workplace Learning Report, 68% of workers prefer to learn at work. 58% prefer opportunities to learn at their own pace and 49% prefer to learn at the

point of need. This illustrates the importance to integrate the 70:20:10 Model to facilitate workplace learning.

The Germany study trip evidently shown how companies like Mercedes Benz (Daimler), Deutsche Post DHL, L'Oréal, Phoenix Contact and Festo successfully adopted the 70:20:10 model to transform its workplace into an environment where continuous learning and development is part of daily work. The 70:20:10 model simply describes learning as it naturally happens and then offers a means to accelerate and support that learning as part of the daily workflow, through working and talking with colleagues and experts and through structured development activities. As an agent for change, it is a framework for extending the focus on learning beyond classrooms, workshops or executive retreats and out into the daily workflow.

A three-year research project, commissioned by Middlesex University's Institute for Work Based Learning, revealed that 74% of workers want more training to fulfil their full potential at work. Adopting appropriate workplace learning pedagogies will deepen and upskill the workforce. The workplace is where the workers acquire and continue to develop the relevant skills throughout working lives.

The approach shall comprise participation in work activities, guided learning at work and guided learning for transfer. Participation in work activities includes learning through performing everyday activities with opportunities to observe and participate. Guided learning at work encompasses close guidance by experienced workers, modelling, coaching, scaffolding and techniques to engage workers through self-directed learning. Guided learning for transfer focuses on the application of learning to other situations and circumstances through questioning dialogues and group discussion.

Blended Learning to Facilitate Learning at Workplace

According to the 2016 State of The Industry research report by Association for Talent Development (ATD), spending on learning programs continued to be a priority for organisations in 2015. The average direct learning expenditure in 2015 is a healthy USD 1,252 or 4% of payroll with 33.5 learning hours per employee.

The State of the Industry has documented the rise of technology in the delivery of learning content. 41% of learning hours used at the average organisation were delivered by

technology-based methods, which is nearly 10% higher than in 2008 and 15% points higher than 2003.

On 28 October 2015, Workforce Singapore, WSG, (formerly known as Singapore Workforce Development Agency, WDA) launched the \$27 million national Innovative Learning 2020 strategy (iN.LEARN 2020). iN.LEARN 2020 will drive the use of blended learning in Continuing Education and Training (CET) to meet the dynamic learning needs of business enterprises and individuals. By 2020, WSG envisages that all Singapore Workforce Skills Qualifications (WSQ) training providers will be delivering at least 75% of their full WSQ qualifications via blended learning.

“Blended learning” schemes represent a combine self-study on the computer with face-to-face teaching in seminars, and are also used in further training. A study conducted by the MMB Institute for Media and Competence Research has shown that such schemes are regarded as the most important learning format by German companies. MMB is an independent, private research institute and consultancy and was founded in 1996 by Dr. Lutz P. Michel in Essen/Germany and is now located in Essen and Berlin.

Unfortunately, blended learning in the workplace is often described as having two components – typically an instructor-led, classroom-based component and an online component. This is actually an early “blend”, according to Diane Senffner and Leslie G. Kepler.

So, the question is, what kind of blended learning that works?

The visit to Lucas-Nuelle during our last Germany Study Trip provide an insight on its blended learning concept. For more than 45 years, Lucas-Nuelle with its headquarters in Germany has been developing and producing training systems in key technologies in areas such as electrical engineering and electronics, automation technology, mechatronics, communications and automotive technology. They developed an e-learning platform called VOCANTO. It is clearly and intuitively structured and uses 3D models to provide simple and easy-to-understand visualisations of examination topics in various professional training programs. They make sure that the students and trainees quickly learn the relevant systems and processes needed in their company as quickly as possible and achieve better test and work results, thus becoming valuable members of the team. VOCANTO stands for the effective and innovative learning and teaching of complex material.

While eLearning is nothing unfamiliar in the CET arena, what really makes the difference is their philosophy in designing the e-learning platform, as well as their onsite lab practices. They highly focus in the learners and the way of how they learn. That genuine intention and seriousness reflect our belief that pedagogy shall always drive the technology.

As reinforced by Diane and Leslie, today's blended learning is much more than two content delivery methods. It typically includes multiple content components and delivery methods based on what is best for the type of learning being designed.

Having said that, careful research shows that today's employees retain very little training content, and even smaller fraction ultimately gets transferred back to their workplace. As a matter of fact, there will be increased challenges when we moved into "blended learning" approach.

Conclusion

A conceited effort to transform the current workforce for the future requires all stakeholders within the system to demonstrate a strong commitment and collaborate with one mindset towards achieving a common goal for the benefit of the country, organisation, social and self. Top management should facilitate and instil a culture of continuous learning in the workplace. Careful integration of workplace learning pedagogies will facilitate deepening and upskilling the capabilities of the workforce. Engaging the modern workforce, which comprise of multi-generation workers will need to modernise the learning approach by embracing learning technologies.

As stakeholder, we need to think of the value we can bring to our role and create a **difference** to transform and prepare the workforce for the future. We need to take one step at a time even though there is no guarantee of success to move forward.