ADULT LEARNING SYMPOSIUM 2016

Future of Work • Future of Learning

A Collection of Symposium Proceedings and Papers
Edited by Hee Soo Yin and Renee Tan
Foreword

Adult Learning Symposium 2016: Future of Work, Future of Learning

The Institute for Adult Learning Singapore (IAL) is focused on raising the capabilities of Continuing Education and Training (CET) professionals, in order to forward SkillsFuture initiatives and enhance learning of the workforce. One of our signature activities is the Adult Learning Symposium, which seeks to bring together local and international leaders and practitioners in the field, to network, exchange and learn on the pertinent issues as well as emerging trends and practices for the future in CET.

At the 6th Adult Learning Symposium held on 3 and 4 November 2016, six keynote speakers, together with more than 70 other speakers and presenters engaged us with two full days of stimulating and inspiring presentations, panel discussions, concurrent sessions and workshops. These sessions resulted in many new ideas, case studies of actual practices and applications by organisations and individuals, as well as suggestions on what could be done in the future, across the four tracks on Workplace Learning, Technology-Enabled Learning, Career Development and Skills Utilisation.

Following this and to take our learning and practices beyond, we have put together the thoughts surfaced at the keynotes and panel discussions, as well as a selection of areas covered during the concurrent sessions and workshops into this publication.

I would like to express our thanks and appreciation to all speakers, presenters and participants who contributed to the engaging two days. To the speakers and presenters, I am grateful for your generous sharing and consent to having the proceedings recorded, transcribed and published.

Till the 7th Adult Learning Symposium in 2018, our thanks again and I look forward to seeing you.

Hui Mei San
Executive Director
Institute for Adult Learning, Singapore
Editorial

Future of Work, Future of Learning

We live and work in dynamic times. Disruptive technologies; changing demographics and evolving global business trends in the workplace impact work and learning. The theme of the Adult Learning Symposium 2016 (ALS2016) “Future of Work, Future of Learning” provides a platform to explore what individuals, organisations and industry can do to prepare for a future of disruptive change as well as to provide a springboard for the co-creation of new knowledge, policy and practice. This editorial highlights key themes and ideas in this collection of ALS2016 proceedings and papers.

Mr Ong Ye Kung, Minister of Education (Higher Education & Skills), Singapore opened the ALS2016 by setting the context of how the Training and Adult Education sector had developed in Singapore, the current landscape, key principles of industry-relevance, quality and empowerment of individuals and the impetus for the sector to continue to be responsive to the changing needs of the Singapore economy and industries. He launched the Training and Adult Education Sector Transformation Plan (TAESTP) (http://www.skillsfuture.sg/taestp) which maps the road to transform the sector so that it can continue to play an enabling role in the Industry Transformation Plans across sectors under SkillsFuture and emphasised that the continued development of the TAE sector is a “joint mission between professionals, the industries and the government”.

Mr Piyush Gupta's opening Keynote on the Conference theme proposes three transformative “re-imagines”. First: a re-reimagining of business with the fundamental shift in power between the producer and the consumer with greater transparency and information available to the customer to make their choices, shifting businesses to become demand driven instead of supply driven. Second: a re-imagining of what the product is and what the job to be done is or the customer journey. Third: a re-imagining of the "pipe" leading the supply, distribution and retail chain from the producer to the consumer to that of a platform or an eco-system with multiple providers aggregating to service the needs of a consumer in multiple ways.

Consequent to the three "re-imagines", Mr Gupta spoke of the need for the workforce to develop more generic or horizontal skills besides vertical skills. Horizontal skills identified include creative and applied thinking or problem-solving leveraging on analytics, adaptability and responsiveness to change, partnering and influencing skills, innovative thinking, a willingness to be proactive and to take risk, and an ability to communicate to make an impression. Businesses will need to re-think how they can develop these horizontal skills in the workplace by changing their pedagogy and curriculum to include job-rotation, more bite-sized contextualised training, idea generation sessions around specific work situations or problems, collaborative learning, learning by doing and experimentation supported by a culture of learning from mistakes. The physical workspace can also be re-designed to facilitate people interacting and learning.
The four tracks of ALS2016 provided the foci for the exploration of research, policy and practice: Workplace Learning, Technology-Enabled Learning, Career Counselling and Development and Skills Utilisation. These areas are emerging areas where an exploration and discussion of research, policy and practice can seed further development, innovation and change. This will in turn contribute to the evolution and transformation of the Training and Adult Education sector and the Continuing Education and Training (CET) landscape.

WORKPLACE LEARNING

The Workplace Learning track examines the workplace as a rich site for learning and considers the interplay of factors when work and learning connect. Professor Stephen Billet’s Keynote on *How learning through work and innovation can co-occur to realise effective workplace outcomes* posits that innovations at work can arise through workers’ every day activities and interactions in response to new occupational tasks and challenges. As workers respond to these challenges they also learn, and also sometimes generate innovative practices and significant change in their workplace. Therefore innovation and learning co-occur at work. These innovations in the workplace are important for responding to new challenges, addressing clients’ needs and responding to changing imperatives and technologies. Yet for innovation at work to progress effectively there needs to be a consideration of this co-occurrence and attempts to align it with particular workplace goals and also those for individuals’ learning. The provisions of continuing education and training (CET), more than securing personal benefits, need to also bring about workplace change. Hence Prof Billet proposed that CET efforts in Singapore need also to be directed to aligning learning with workplace change.

Topics explored in the concurrent sessions range from case studies and experience sharing on using socio-cultural theory in workplace learning within the civil aviation industry, developing the workforce in the pest control industry to the implementation of meaningful workplace learning and that which leads to productivity improvement. Workplace learning in New Zealand, and that of vocational teachers in Brunei are also drawn out. In this publication, insights into *Catalysing Workplace Learning Within from Without* are detailed by Lai Poi Shan, Millie Lee and Lee Wee Chee. Using the Learning@Work ‘bootcamp’ with a pilot group of organisations, they outline the various rewards and challenges in getting workplaces to come on strongly to workplace learning. Helen Bound, Arthur Chia and Yang Silin put forward the need to re-design and re-conceptualise Assessment for the Changing Nature of Work, with a thought provoking questioning of the role assessment plays in workplace learning today. Finally, Ong An Dian and Lim Siew Kueen examine efforts to *Integrate Vocational, Soft and Literacy Skills* in the hospitality industry in a bid to propel learners to learn the necessary service skills in a holistic manner.
TECHNOLOGY-ENABLED LEARNING

The Technology-Enabled Learning track examines how technology has and can be used to facilitate and enhance learning and access to learning. Prof Steven Wheeler’s keynote on Learning in the Digital Age - The Theory and the Practice focused on the digital praxis where practice and theory meet. He first debunked the digital natives and immigrants age divide in the use of technology with the story of how his eighty-eight year old father learnt to use Facebook and started blogging and in the process of learning to use the creative space for his writing, collected 57,000 likes. It is all about starting, learning to acquire competency and then mastery.

The future according to Prof Wheeler, is going to be social, personal and connected. He emphasised the importance of creating open spaces where people can be creative, share ideas and collaborate and learn through tinkering through mistakes and failures and the need to design our spaces to facilitate digital learning. Students and employees now not only consume content but also produce, share, re-purpose and re-mix content. Learning is also changing as the processes by which we learn change. An example of this change is when personal devices brought to class are used to Google information and they can ask questions and “drill down deeper” in their learning.

Various new pedagogies for which technology can be used to enable and enhance learning were introduced. These include: rhizomatic learning which is a chaotic form of learning which eventually forms some kind of order much like the web; communities of practice where knowledge is negotiated and connectivism, the idea that you can store your knowledge with your friends and make connections in self-organised learning; paragogy which refers to when students and teachers become co-learners working and learning together; heutagogy which refers to self-determined learning; disruptive pedagogy which refers to positive disruption which pushes us out of stagnation and creates an impetus for change. Flipping the classroom is one such example and he suggests, flipping the teacher where students play the role of the teacher.

Topics explored in the concurrent sessions include a case study examination of whether online learning makes good business sense; how integrating technology in training plays out and the enabling of skills training through the use of mobile phones. Further case studies presented outline technology-enabled learning in work-at-height training, disrupting classroom learning through a self-developed system and transforming learning within the Singapore Armed Forces. Chen Zan and Sim Khee Lian then illustrate the use of Open Innovation – Process and Partnership in Seeding Learning Innovations in CET in Singapore through the InnovPlus activity organised by IAL’s iN.LAB. Furthermore, Annette Winch, through a programme in Australia, shows the potential of TELLing it and SEEing it via ITUNES U – from Substitution to Redefinition, Transforming Educator Capability, as she tells how a breakthrough may be made in deepening learning with technology when learners are thoroughly engaged in new ways of learning.
CAREER COUNSELLING AND DEVELOPMENT

The Career Counselling and Development track examines how career counselling can play an increasingly important role to equip students and adults with necessary skills to choose and navigate the changing labour market landscape. As new trends and developments emerge and with work and learning changing, new approaches, tools and resources for career counselling and development and the development of career facilitation professionals were also explored. Prof Rich Feller’s Keynote *Bridging Academic and Career Functions within the New Workplace* argued for a shift in thinking that sees career development not as just a preparing of the young for work but also as an essential adult bridging activity throughout life. Career development is now seen as Life Design where the design of one’s career is also a design of one’s life. The narrative approach was highlighted as an approach which can help develop career readiness over one’s lifetime to navigate the changes in life and career. Prof Hazel Reid’s Keynote *Transforming Career Development: Narrative Career Counselling as a Learning Practice* further examines the use of the narrative approach in Career counselling. She argued that good career counselling is a learning process. It is about asking good questions that lead clients to deeper reflection, foster agency to act in a constantly changing world. It is not a “one-size-fit-all” but is a nuanced one that needs to be trans-theoretical, contextualised and culturally sensitive. Hence the need for career development practitioners to be more educated and trained to help their clients develop the capacity for biographicity which is a reflexive process to reflect on new and sometimes troubling experiences, and re-think and absorb them into their life or career story. This also demands that career practitioners develop the capacity to be reflexive career practitioners.

The concurrent sessions examined different perspectives of career counselling practice, covering such topics as the use of career and values genokeygrams, an Asian perspective to career counselling, career development interventions to help retrenched PMETs in today’s VUCA economy, clinical supervision in career development, narrative career development innovation, educational and career guidance (ECG) in schools, the work of ECG counsellors in Post-Secondary Educational Institutions, the development and retention of talent through career conversations and how an organisation invests in its people to build an award-winning company culture. This publication captures the considerations of Thomas Yeo and Wong Sing Chee as they contemplate the *Future OF Career Development, Future IN Career Development*, outlining challenges to the profession in a dynamic world. Timothy Hsi then explores the Professional Identity Development of Career Practitioners, looking at how practitioners in Singapore would need to align their practice to accepted professional norms and standards for all career practitioners to be professionally regarded.
SKILLS UTILISATION

The Skills Utilisation track examines how skills are used and applied at the workplace. This was examined at national, sectoral and enterprise level.

Prof Ewart Keep’s keynote on *Policy models, Policy assumptions and life-long learning - reflections on the UK experience* observes that although the policy agenda has shifted from a focus on skills supply to the more sophisticated OECD 2011 skills strategy agenda about skills and productivity, skills and innovation, skill usage in the workplace, technological change and job quality, UK is still “stuck” with the supply-side strategy. Singapore, in his view, has moved on in ways that are more productive with SkillsFuture, integrating its skills strategy with a broader strategy around economic development and industry transformation, embracing large sectors with large employment and moving them in terms of internationalisation, innovation, productivity enhancement and skills as well as strengthening educational pathways and support for career choice not only in the job people initially go into but also the jobs they may move into later in life because of technical change or economic restructuring.

Prof Keep is of the view that Singapore can however learn from the UK in their research efforts on how people learn in the workplace, how they learn in and through work rather than off-the-job learning, through courses. The emerging body of research suggests that for better results, two things need to be done. If you want more life-long learning, better learning and development, then the job needs to have sufficient variety of tasks, depth and breadth of skills and knowledge and the discretion and space to innovate. This is also in how the job is designed. It also suggests that how work is designed or structured can encourage or impede learning, skills development and mastery. Workplaces which provide better on-the-job learning environments can also maximise the use of skills in more workplace and bottom-up innovation and higher levels of productivity.

Prof Keep also suggested that Singapore can learn from Scotland which had launched a labour market strategy which provides a completely different way to think about employment, work and job quality as an interconnected whole. Scotland also has a manufacturing action plan and a specialist government body, the Scottish Manufacturing Advisory Service which helps firms redesign their competitive strategy, adopt new technology and re-engineer work around that. Scotland’s lead economic development agency, Scottish Enterprise has set up a workplace innovation service to help organisations improve their workplace innovation and productivity. Scotland is also funding research on workplace innovation and job quality in a new centre at Strathclyde University.

Topics and issues explored in this track include an examination of job quality in Singapore; a case study on the skills use in a supermarket after staff had undergone integrated learning; another case study on the “Earn-and-Learn” programme in the logistics sector; some understanding of the Programme for International Assessment of Adult Competencies (PIAAC) derived data pointing to the impact of continuing education;
training participation and literacy skills and an insight into Australia’s vocational education system, with its industry-led nature allowing for both flexibility and quality. Zecharias Chee and Fiona Loke also uncover the link between generic skills and job quality, and its effect on staff turnover, relying on data from selected sectors.

To bring the voice of the individual learner into center-stage, the Journey to Mastery panel discussion explored what it took for five individuals recognised as experts in their field to navigate their careers and skills development in their respective journeys to mastery. A transcript of the panel discussion has also been included to highlight how in a sea of change, individuals can navigate these changes and forge on in their journey to skills mastery. The panel discussion also highlights what constitutes important contributing factors to skills mastery and the panellists’ views on how they see the future for their sector and how they are preparing for this future.

The Symposium panel discussion had the Keynote Speakers engage and interact around questions from the Symposium participants on the theme *Future of Work, Future of Learning*. This covered a wide range of issues from senior management support and buy-in for workplace learning and job redesign, the bridge from pre-employment to continuing education and training, and also the transition from school to work and the recognition of informal learning; to the question of career choices, the greater acceptance for academic tracks vis-à-vis vocational tracks and the fulfilment of individual, parental and societal expectations.

This publication seeks to provide a reference of the ideas, research and practice presented in the Keynotes, panel discussions and a selection of papers from the four symposium tracks as space does not permit all the papers to be included.

It is our hope that the dissemination and exchange of ideas in this publication will catalyse new and creative developments in policy and practice in the Singapore CET system as an autopoeitic living system. As different players in the system interact and learn, change and evolve, the CET system continually changes and evolves to be responsive to the needs of a perpetually changing world in the *Future of Work, Future of Learning*.

Hee Soo Yin and Renee Tan
Institute for Adult Learning
Editors, ALS2016 Publication
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Ng Cher Pong, Chief Executive, SkillsFuture Singapore and Deputy Secretary (SkillsFuture), Ministry of Education

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LADIES AND GENTLEMEN,

1. I started the Adult Learning Symposium back in 2008 when I was the Chief Executive of Singapore Workforce Development Agency. Therefore, now years later, I am happy to join you today for the Adult Learning Symposium 2016.

KEY TENETS OF TRAINING AND ADULT EDUCATION SECTOR

2. Singapore has a strong Training and Adult Education (TAE) sector, which comprises a diverse landscape of public and private providers, supported by a community of training and adult educators. Our providers include post-secondary education institutions such as Institute of Technical Education (ITE) and Polytechnics, and 450 private providers offering training across many sectors. What we have today took many years to build, and is based on a few underlying tenets.

3. First, relevance to industry needs. This is why all training programmes supported by SkillsFuture Singapore (SSG) have to be industry validated. This is also why Polytechnics and ITE continually engage industries in developing curriculum and programmes that bridge the world of school and work, such as enhanced internships and the SkillsFuture Earn and Learn Programme.

4. The second tenet is about maintaining high standards of training quality. This is why SSG has developed a comprehensive system of quality assurance, and it conducts annual surveys of training outcomes with individuals who have gone through training programmes that it supports. Two weeks ago, the Committee for Private Education announced recent regulatory changes for private education institutions which offer external degree programmes – which is also in line with this key tenet.

5. Third, is to empower individual workers. Since the mid-2000s, the Government shifted its support for adult workers training from funding employers to train their workers, to supporting workers directly. Supporting individual-initiated training empowers workers to take charge of their own career development, and pursue their own aspirations and interests, with guidance from the network of career counsellors run by Community Development Councils (CDCs) and National Trades Union Congress (NTUC). More recently, we pushed this idea further, through the granting of the SkillsFuture Credit to all adult Singaporeans from age twenty five.
The SkillsFuture Credit scheme is so successful that Singaporeans forget about the other SkillsFuture initiatives. In fact, the whole training landscape can be likened to an iceberg. It is a robust system and SkillsFuture Credit is a small portion of it.

**STAYING THE COURSE – PUSHING FOR EXCELLENCE**

6. These key tenets are still very relevant in today’s context. In fact, they are now undertaken by the national SkillsFuture movement. The TAE sector must be able to incorporate these tenets in your daily work as our partner in SkillsFuture.

7. Over the past 10 years, there have been several key initiatives that have shaped the TAE sector and enhanced its role. In 2005, the TAE Workforce Skills Qualifications (WSQ) framework was established to deepen the capabilities and professionalism of TAE practitioners. This paved the way for the Advanced Certificate in Training and Assessment (ACTA) and the Diploma in Adult and Continuing Education (DACE). These two programmes form the backbone for quality Adult Educators (AEs) and Curriculum Developers.

8. In 2012, WSQ training providers were progressively required to ensure that their trainers and curriculum developers obtained ACTA and DACE certifications. Starting from this year, we took another step to raise the quality in the TAE sector, as the Institute for Adult Learning (IAL) took over the delivery of all ACTA and DACE programmes. As a result, IAL to the TAE sector is like NIE to teachers. This enables us to make a concerted push to continue to raise the professionalism of AEs.

9. IAL is also offering four Master degrees that cover the key areas of adult education. They have attracted a very high-quality intake of professionals from the TAE community. Their occupations are diverse, from managers, researchers to bankers and nurses, from public and private organisations. They are taking on TAE roles in their job role either as a main component of their work, or as a supporting function. To date, 160 professionals had graduated across the four programmes, and another 137 are in the midst of completing their studies.

10. As a result of these initiatives, quality in the TAE sector has increased significantly. We will continue to actively encourage those in the TAE community to continue to upgrade and pursue skills mastery.

11. The TAE sector has to continue to be responsive to the changing needs of the economy and industries. How do we stay the course and push for excellence? The TAE Skills Council, which is led by SSG and involves key industry stakeholders, has been working together over the last few months to develop a comprehensive TAE Sector Transformation Plan to chart the way for the sector going forward. The following are the key thrusts of the Plan.
12. First, the sector will need to take steps to transform from being a service provider to becoming a strategic partner to businesses and individuals.

13. As TAE providers, you will have to rethink your own business models. Many of you know that businesses and individuals are now looking for more than trainers or subject matter experts. Many may not even know what they need. TAE professionals must be able to understand the challenges of businesses, their skills requirement, and play a part to help them raise their game.

14. To do so effectively, the TAE sector will need to significantly strengthen its capacity to understand current and future skills needs of businesses and individuals. To do so, it must keep abreast of the developmental trends of the sector – trends that CEOs and Boards of Directors are worried about, and understand what skills are in demand for the market you are serving.

15. In my years of observing the TAE industry, one major area that needs your help is to codify the knowledge, skills and expertise of that reside within organisations. Often, these are developed through experience by an earlier generation of workers, many of whom may not even have proper skills and academic qualifications. But with their retirement we risk losing those expertise altogether. We don’t have to look very far to find an example of this happening – just look at our hawker stalls – our hawker masters are having difficulty passing on their trade. There is a big opportunity for professional help here – to codify the skills, translate into training curriculum, so that the capability can be passed down and be built upon.

16. Second, SSG will continue to support the TAE community in its push for excellence. There are several initiatives under the Transformation Plan to achieve this.

17. We are actively supporting the use of technology in learning. iN.LEARN 2020 was announced in October last year to encourage training providers to adopt technology-enabled learning, with $27 million set aside over the next three years. Good progress has been made. For example, $1.5 million in support of 8 projects had already been committed under the e-learning development grant. We have also filled almost 4,000 training places for courses that help the TAE sector adopt e-learning tools and select the right learning technology.

18. Third, SSG will increase information transparency by requiring training providers that receive direct funding to participate in a trainee outcomes survey. Results obtained will be published, which will enable businesses and individuals to make more informed choices on which training provider to partner and which courses to enrol for. At the same time, SSG will also enable qualitative feedback from learners.
The information will help the TAE sector improve its products and services to meet the needs of its customers. SSG will start doing so from October 2017.

HIGHER PROFESSIONALISM

19. Last but not least, TAE providers must play your part to help training professionals develop new and emerging skills, deepen their existing knowledge in their fields, and further professionalise the trade. The Adult Educators’ Professionalisation (AEP) initiative sets the standards and accredits established practitioners to recognise them for their contributions and professional and pedagogical excellence.

20. Ms Jessline Yap exemplifies this. Jessline is currently an adjunct Adult Educator with IAL conducting the Workplace Training and ACTA programmes. As a strong believer in embracing continual learning and growth to change the lives of others around her, she actively pursues other professional development courses such as DACE and a Bachelor of Arts in English with Psychology to stay abreast and skilled in emerging areas for TAE professionals. Keep it up Jessline!

21. To support more professionals to be like Jessline, SSG is developing a SkillsFuture Study Award for deserving adult educators to deepen their skills and raise their professional standards. The SkillsFuture Study Awards can also be used for the four Masters programmes offered at IAL.

22. Our Autonomous Universities (AUs) are setting up adult training units and this is an encouraging development. Adult education would require different training philosophy and approach. I hope that over time, such units can be the research and development (R&D) department within our AUs, where they can constantly be in touch with the industry to learn from them. With a short production cycle, they can come up with short modular programmes that are relevant to the industry. The AUs should absorb some of this knowledge and practices into the undergraduate programmes. This is the opposite of today’s practice of modularising undergraduate programmes to deliver to adults.

CONCLUSION

23. The development of the TAE sector is a joint mission between the professionals, the industries and the Government. In this era of SkillsFuture, you play a critical and decisive role. Training is not just delivering a lecture and showing slides, but you dive into the dreams, hopes and fears of your trainees, and help them develop. You hone their skills and raise their game to a higher level, but more importantly, if you are really good at what you are doing, you uncover their passions and interests, and activate inner motivations.

24. SSG cannot do what you can, but it can support you with resources, authoritative accreditation and spreading important public messages. Much work has already been done, but we will partake this journey together for years to come. I wish you a fruitful Adult Learning Symposium 2016.
Minister Ong, distinguished guests, ladies and gentlemen, I have to say it's actually a real pleasure to be here to address you this morning, particularly because this is a subject which is indeed very close to my heart.

I was just telling the Minister that over the last two or three years, if I had to think about what has taken the biggest amount of my time at DBS, it is actually this one big issue: how do you recreate and reenergise and recharge a workforce? So it is something that I do day-to-day in my work, which is why I think it's kind of good to be able to share some of my own experiences with many of you.

I want to start off with a little bit of a non sequitur, as it were, which is that life has changed dramatically in the last 20 years. If you just think about email in the mid-90s, mobile phones around 2000, smartphone is five, seven years old and then you throw in increasingly artificial intelligence, cloud computing, robotics – life is changing every day. And you can see that in the way you live, you communicate, you consume, you correspond with people. It's changing in your everyday life and it's changing at a pace that is unimaginable.

And the reason I start with that non-sequitur is, it is my belief that to stay on top of every new technology and every change that is coming on us is very hard. I think the real fundamental challenge is to change your way of thinking so you can adapt and respond to change more than the specific technical skills and tools that you need to learn. This is true in our everyday life and it is true in the workforce.

In my comments, I'm going to really focus on a few things, what you can do with the workforce. I'm going to pepper it with examples of DBS and I do that with a little bit of caution. This is not to suggest that DBS has fundamentally changed everything or got everything right, but over the last few years there are some things that we have tried to do which have proven to be helpful and perhaps sharing some of those perspectives will give you, all of you in this room, particularly practitioners, a sense of what might be possible to try and achieve.

I want to start first with reimagining business. There are a lot of ways you can re-imagine a business. I essentially have three big things which I think are worth thinking about.
The first is this:

There has been in the last 10–15 years a fundamental shift in power between the producer and the consumer, and the shift comes from transparency, it comes from information, it comes from choice and it comes from comparison. Today increasingly the value surplus is shifting into the hands of the consumer because the consumer knows a lot more. Which of you does not go online to compare? Which of you does not go online to compare pricing, to share information? And the minute you start doing that, that value surplus starts shifting.

This is an important change in the nature of business because it means that business, instead of being supply side driven, will increasingly become demand side driven. And we’re beginning to see that in a lot of the things that we do.

At DBS, there is an application we developed called iWealth. The situation used to be that wealth management and private banking is a very supply-side activity. You train Relationship Managers, they go, they talk to consumers, you give people ideas, you give them advice. It’s increasingly the case around the world that consumers want to be self-guided and self-driven in wealth management. The advisers can use technology, but it’s not just the technology. Increasingly people are doing their own research, they’re making their own choices, they consult with somebody for some advice, but finally they act on their own. By the way, this reduces commissions, it reduces pricing. This is the shift of consumer power that I spoke to you about.

We launched this iWealth application a few years ago; today it’s regarded as the number one iWealth application in the world. The take-up of this has been remarkable. So today, well over a quarter of our wealth clients essentially try to self-serve. This is just an example of the shift of power from the producer to the consumer.

The second big change in business: I think increasingly technology allows you to think of your product in really fundamental terms. I re-imagine what the job to be done is. This is a famous slide from IKEA. The idea is the job to be done for which you’re buying a drill is not to drill a hole. That’s a misconception. The job to be done is perhaps to hang a picture, but actually even that might be a misconception. The real job to be done is to create memories and/or create pleasure, and that’s why you want to hang the picture.

This fundamental re-think of what is the game, what are you producing, is very, very dramatic. Think about what Airbnb does or you think about what Uber does; they are reimagining the job to be done. They are therefore reimagining what the customer journey needs to be. This idea of reimagining the product itself, reimagining the end state, that is very profound and you can see increasingly the companies who have been able to be successful creating immense amounts of market gap are reimagining the job to be done.

We do some of that at DBS as well, so I have a couple of examples. This is an example
we just launched earlier this year in Singapore. We found that a lot of people when they
go to work in the morning, they want to go to the Starbucks or go to this place, get their
morning coffee and when they go there they’ll either use cash or use a credit card to
make the payment. In the past, our notion or job to be done was you’ve got to make a
payment so we’ve got to give you a credit card. Our people started reimagining and said,
‘Actually, the job to be done is not to make a payment with a credit card; the job to be
done is to buy the coffee because you want to have your drink.’ And if you re-imagine
therefore what it is they’re trying to do, you can re-imagine the customer journey.

So, we have now tied up with several outlets. Old Tea Hut is the first one, where the
menu of Old Tea Hut now comes on our App. So on the way to work, sitting in the train,
in the MRT, you can call up the menu, you can choose, you can place your order, you
get a quote. The credit card gets debited quietly in the background. When you get to the
counter, your order is already ready. So you don’t queue, you don’t stand in a queue,
you don’t make a payment – you pick up your order and go. Reimagining what is it that
you’re trying to do, the job to be done.

The third idea I want to leave with you is this idea of pipes to platform. The notion
of business traditionally has been pipes and pipelines: there is a producer, there is a
consumer and there is a pipe in between. Sometimes it goes through the wholesale
chain, goes through a retail chain distribution process, but it’s a pipe. There’s a lot of
recent research; this is the headline of an article by some people, including somebody
who lives in Singapore, which just talks about the idea that the future of business is no
longer pipe, but it is a platform. How do you create an ecosystem of participants, multiple
providers aggregating together to service a need of a consumer in multiple ways? When
Apple succeeds it’s because they’ve created a platform on the App Store. When Alibaba
succeeds it’s because they’ve created a platform bringing together millions of suppliers
and millions of buyers on top of it. The platform economy causes you to fundamentally
re-think again the nature of the business you are trying to be.

There are a lot of other ways you can define business, but to me these three changes in
the nature of business are actually very profound.

What we have tried to do in DBS as well, if you think about the platform economy,
we launched this Application called digibank in India earlier this year, but the truth is
we didn’t build it. So we were able to tie up with several other providers who we just
aggregate through an API system, and when we distribute it, we do not just distribute it
because we tie up with several other providers and we distribute it through an ecosystem
of players. So we have a large ecosystem which is actually participating in creating this
opportunity, for example.

So back to if you think business is changing and the way you are going to conduct
business is changing, then obviously it has an important impact on the way work is
changing. I think this idea about change in the nature of work is perhaps the most important idea for all of us in our lifetime. Just quickly going off script again, like the Minister: I really, really worry about what the change in the nature of work means because increasingly both artificial intelligence and robotics are real.

I was commenting to somebody that DBS’s own headcount is beginning to peak and it’s beginning to peak because the computer can do a lot of things today that the human being used to do. It’s not just the robotic arm which can move stuff on the assembly line. In our call centre, the artificial intelligence can answer most calls. In the digibank I mentioned, 96% of all calls are now answered by the machine. You do not need people to do that. You can see that in surgery. The best diagnostics are done by the computer and the best surgery is done by the computer. You can see that in wealth management. The best wealth advice is today given by machines. So, I think we have some profound challenges in terms of generally the nature of work.

However, I think the underlying thing that will be constant is this. Because of the change that I talked about, how business is changing, work will change because it will be more demanding. And I am seeing this. In the past you organised work by departments, so this is the import department, this is the export department. You had a fixed body of work, you trained people to do a fixed body of work. Today, the work which is coming into us is a lot more fungible, it’s a lot more diversified and it’s increasingly driven by what the consumer demands. This is not new, by the way. Dell mastered this 15 years ago. Dell was the first PC company in the world which went off from an assembly line production system to a manufacture on demand production system. In Penang, you could place your order on this thing, you would say what you wanted, you can mix and match and they would make a computer on demand. They did it in the manufacturing space.

Today, 15 years on, this is true in most places. Certainly, we see it in banking. Today we are getting all kinds of work and the way we are training our workforce is to create parcels of work and distribute them on the fly to different workers. But that means the work is going to be demand-driven as opposed to supply-driven and I have got to start thinking about training my workforce in very different ways. I have got to create a lot more general skills and I have got to create a lot more fungibility because I have to be able to respond to different peaks and troughs in demand.

Second, work is going to be a lot more collaborative, a lot less hierarchical, if you will. We are used to a work system where we have bosses, then we have middle management and we have spans of control. The boss tells the next level what to do. They tell the workers what to do because again it’s the supply side. So, you tell them what to do, they get together and do it. But in a demand-driven world, since you do not know what kind of volumes are coming in which place, you have to be able to work a lot more collaboratively. And by the way, the young kids prefer doing this anyway. Their whole
idea of making an impact, their whole idea of working, is to work on the fly with a lot of people all the time. So how you create this whole sense of working collaboratively as opposed to working hierarchically is very important. It is a very different style of working and it will be very important in time to come.

Finally, it is changing all the time. I told you that my personal life is changing. I can tell you in our own lives, it is changing. This is about a self-driven car, but in our own work environment every day, my people come and tell you just a new way of doing something. So, it will not only be collaborative, it will not only be demand-driven, but it will be changing all the time. So, whatever you thought was a good way to do something yesterday, two days later they come and show you a better way to do the same thing.

Which means that if the nature of business is changing and the nature of work itself is changing, then we really have to be thinking about what kind of skills we are talking about developing, and I want to start with this. I recognise the fact that you do need technical skills – I am not making the case for not doing technical training, of course you do – but I am also making the case that a large part of the skills that we are talking about to cope with this future world are really different kind of skills. It is not just technical skills.

On the IBF Council where I sit, we spent over the last year thinking about this issue. Most of the banking competency development work we had done was very vertical; how do you create a career ladder for risk managers, how do you create a career ladder for consumer bankers? As we were doing more thinking around this, it was quite clear that the challenge is not in creating a vertical set of ladders. The challenge is creating what I call a whole set of horizontal skills.

So, first is this: applied thinking, problem solving. It is obvious to all of us in the past, knowledge was at a premium, information was at a premium. If you knew something, if you knew how to do it, you had studied it etc., you did well. Today, you know what? You can Google it. There is almost nothing you can’t google in two minutes. My friend had a stroke the other day and so on the way to go visit him, I googled what it was about the stroke and so while you are not a medical doctor, in ten minutes you know enough to be able to ask some questions and to tell him maybe there are four things you need to do, even something which is as dramatic as a stroke. We see this all the time.

The challenge is therefore no longer who has the information. The challenge now is, can you apply it? Can you think about solutions? Can you think about taking that information and saying what is the impact, how do I do this, how do I problem solve? And we are finding increasingly today, that our best people are people who have built this whole capacity to do creative thinking, applied thinking and problem solving. So very different kind of skill sets are needed.

Consumer behaviour, leveraging insights to analytics. You know, recently, we hired a couple of anthropologists. So, an anthropologist in a bank is probably unheard of, but we hired them because for us the big thing is, in a demand-driven world, to try to get insights
into: what causes the demand? why does this consumer behave the way the consumer does? can you change a few things to make the consumer behave differently? These become really important skill sets.

So, the slide shows you about analytics. We have every form of data; a bank has the best data on anybody. In my credit card system, this is the reality and it’s going to scare you, but this is true. I know who you are, I know where you are at any point in time, I know what you like, I know where you’re going, I know where you went for your last vacation, I know where you’re going to go for your next vacation. I know where you went to eat food last week. I know where you’re going to eat food next week. I even know before you do where you’re likely to eat food in the next month because I modelled you. So, we have a lot of stuff. But the skill you need is to understand the data, put the data together and then apply insight. Insight is a very different kind of skill, figuring this out.

Adaptability, embracing change. Just because the pace of change is so rapid, you have to build a skill set for being adaptable, for being able to respond. I keep telling people there is no way you will get it right, but if you can respond quickly, if you can respond to a changing dynamic, you can respond to the changing marketplace or technology, you’ll do okay. But that means you’ve got to build a skill set of being adaptable, of being able to respond to change.

Partnering and influencing. This is not an easy skill. It’s not an easy skill because, by and large, we are used to a command and control environment, especially in Singapore, where a lot of our leadership comes from the army. So how do you switch to a situation where you are sought after for partnering and influencing skills? These are skills which can be developed but these are not skills that we normally think about. But it doesn’t come naturally. You can work and create a set of skills for partnering and influencing.

Innovation. People think innovation is ingrained. Innovation is not ingrained. Yes, some people are naturally more creative than other people. But innovation can be taught. It can be taught through a set of processes, it can be taught through a set of tools, it can build an ability to think differently and an ability to think innovatively.

Risk-taking. this is the other big challenge we have in Singapore. My single biggest problem in our country today is we are really a kiasu country. Why? Because we've done well and good is the enemy of great, and because we've done well, it is very hard to take a risk where we might wind up making a mistake. But the reality is you have to make mistakes. And so how do you create this sense of being proactive and being willing to take some risks in the future is not easy, but again, it can be taught.

Communications. Communications is not new. It's been important over the eons. But when you find with today's technology and you find with today's generation short time spans and short learning – and we'll talk about that – you really have to think very hard about the packaging of the communication. So, it's not just a question of having the emojis and the emoticons, but you've got to understand that when the emojis and
emoticons work, it works because the brain is accepting communication in packaged form. We find one of the most important things is teaching people, teaching our people on how to communicate in a way that can make an impression and leave something lasting. It is not an easy thing. It is a different skill.

So, if you think about all the skills I have talked about, they are fundamentally what I call a whole set of horizontal skills. You do have to learn, and we teach our people coding and we teach our people how to look at data and data analytics and so on. But in truth over the last few years, the thing that has had the most profound impact on our workforce is not the technical training, it is this: it is how do you get the horizontal skills and get people to think differently.

To me therefore the challenge for all of you, for adult education and for the future is how do you start thinking about creating a set of horizontal skills which will be really important in this workforce of the future. So, as I said, horizontal versus vertical. I just want to emphasise that point: I am not saying you don’t need vertical skills, of course you do. But I think the balance increasingly is in being able to develop a generation of people or even adults who can connect the dots, who understand how to respond to change, who understand how to adapt. For that, you need to build a significant amount of horizontal skills.

We have programmes at DBS. “Two-plus-Two”, “Three-plus-Three” is a programme we launched some time ago. This is back to communications. It’s not a fantastic programme, but the communication of Two-plus-Two and Three-plus-Three is very easy for people to know and remember. All it says is it encourages mobility in the company and because we are big believers that the more you work in different places, the more you learn. So, Two-plus-Two says that if you work in a job for two years, then you have the right to ask for a move and your boss must release you in two months, he cannot hold on to you. And Three-plus-Three says that if you are above a certain level, VP level, then the numbers are three and three: you’ve got to work three years before you can ask for a move and the boss will be given three months to move you.

Now, the idea is not the programme. The idea is the communication and what it encourages in people is the sense that mobility is not only encouraged, it is expected. And why do we focus so much on mobility? Because if you really want to create skills which are horizontal skills, you want to get people to connect the dots, you have to see a few things. And if you see a few things, you become a lot better.

Bite-sized learning. We figured that the focus on learning through doing long programmes and long courses etc. doesn’t work so well. We’ve been doing it forever in the workplace. People go, they’ll attend a one-week, two-week, three-week programme and six months later you try and see what they have put to use in their workplace and the answer is not spectacularly good. We are finding increasingly that what works and what is working for the human being in real-life, with shorter attention spans, is information as you need it
when you need it. This actually seems to work a lot better. So we have been changing our entire pedagogy, our curriculum by making it bite-sized. So we make it available on Apps. This is an example of what we call DBS Learn and it’s compliance training. So, as you know, we spend a lot of time with compliance training. We used to make people go through reams of paper, then we moved it online, but you still had to spend two hours and click yes and no and etc.

We changed it to this thing where you can get little bits and these are two-minute, three-minute bits, small videos, small clips on situations. ‘If this is the situation, what would you do,’ and then we tell them, ‘Hey, this is the right answer.’ We’re finding that employees’ willingness to go through these two, three, four-minute bits situation improves dramatically and then they can do it in the moment.

*Contextualising training* is very important and so people figure, ‘Hey, I’m in this situation, what should I do?’ That is the right time when they really need to learn, as opposed to learning and then facing the situation six months later. So, we are finding this whole idea behind bite-sized learning in the moment is – we’re doing it for multiple things, we’re not just doing it for compliance, but this is the latest one that we just thought of.

*Bursts of inspiration*. So, people do this all the time. We’ve got a whole programme called Imaginarium and the Imaginarium programme is much like this technology bite-sized leaning. It is around creating bursts of inspiration for people. And so we do several sessions. We bring people – this is again not a new idea, people have done it for generations, but we focus it around specific situations and we bring practitioners from outside to talk about, ‘This is what I did, this is how it works and this is what people might be able to do.’ So we find again that we get very good response to this.

*Collaborative learning*. Collaborative learning, a lot of this is about tools and opportunities. The truth is that people today learn from each other. If you want something, you go to Wikipedia. You go and find collective source knowledge and wisdom. Most of today’s young generation learn by asking, and by the way, this is how we learnt before. In the days that the Minister talked about, the early days of PUB and whatever, you learnt by going and asking your colleague or you went and asked somebody, ‘Hey, how do I do this?’ So, people learnt from each other.

Today’s toolkit allows you to do that if you are willing to invest in the toolkit and invest in an environment which lets people do this. So, at DBS for example, we are rapidly moving people off email and moving them into Yammer, which is effectively Facebook and Skype. So, we’ve given everybody a set of tools. We’ve made it available to everybody in the company. We give them mobile access. We actively encourage people to create their own workgroups and we find increasingly that people are learning by sharing. So, collaborative learning is very important, but you have to be willing to invest in some of the tools.
By the way, we also do that in our physical spaces. Typical banking departments have cubicles. This is what all of our – not all, I guess a third of our workplaces today look like this. So, we eliminated the cubicles, we created open work floor plans. We have instituted both agile and learning methodologies. We have groups of people who come, they stand, they stand for two hours around. Meetings are conducted standing up. They’ll go and work off Post-its on the wall. So, we have pockets of this everywhere because we find that putting people together and letting them talk to each other encourages a very different kind of learning.

*Learning by doing.* You know, all of you must have noticed – I certainly did – the way I deal with something, a new product, a new application, is very different from the way my kids deal with it. Every time I get a new thing, I pull out the manual first. So, I try to figure what it’s supposed to do and how does it work. The kids have never seen a manual in their life. They learn by getting on, and three days later, they know ten times more than you do. Their brains are wired differently. People learn by doing.

I thought this only related to Gen X, Gen Y, the kids. We started doing a lot of this learning by doing, creating – this is the Post-it wall that I showed you, this is one of our rooms. But interestingly, I found that this learning by doing applies even today particularly to adult learning. Adults learn much better if you give them an opportunity to learn by doing.

So, I want to give you this story about this thing we call Hackathon. Three years ago I charged my learning department with a single thing. I said I want to make sure that all 20,000 of our people become digitally savvy in two years. So, ‘You figure out what you need to do but I want everybody to have a reasonable degree of digital awareness.’ So, they went off and spent a couple of months, they did some classroom sessions, whiteboard and so on and then they came and told me this is not working because at the end of five days of going and understanding database analytics, people still haven’t figured out a thing.

So, they came out with this new plan. We were the first company in Singapore to really go for it in a big way. They said we’ll do these hackathons, and the hackathon thing, because we’re a big bank, so a lot of start-ups like to work with us. So, they went and enrolled a number of start-ups and we wound up creating small teams. The team would be about eight or ten people. In the team, there’d be two people from the start-up, people who knew basic coding, and there’d be six or eight people from DBS.

We put them through a five-day programme. On Monday, they’d be given half a day of basic technical stuff, what is the basics of technology, and then they’d be given half a day of thinking, journey thinking. So how do you think customer journeys, how do you think outside-in, how do you go talk to customers, do journey thinking. They’d also be given a problem to solve, some banking problem, sometimes non-banking problems. Between Tuesday and Thursday they were thrown into basically a start-up environment.
So, 72 hours, around the clock. We’d give them mattresses to sleep, we’d have a ping pong table, give them free beer, rave music. In many of our places we hired a warehouse so they could be in a warehouse, exactly like a start-up would be.

The idea is after 72 hours they have to come up with an App and they come up with an App on the mobile phone which can solve the problem. So, they’ve got to go do research, come up with an idea and then they work with those two coding kids to actually codify it and put it into an App. On Friday, they present this App to a management team saying, ‘Hey, this is what we’ve created.’ I have to tell you the power of the knowledge on Friday that we can create an App and do something which solves is unbelievable, it’s dramatic. The first two hackathons, we sent our 20-year-olds because they said they’re digital natives, they know how to do this. In the third hackathon we sent the 40 and 50-year-olds, everybody was over 40. I tell you, I was blown away by the impact this had on not only the confidence level of these 40 and 50-year-olds, but their willingness to experiment and say, ‘Hey, I can now do this.’

So, to me this idea about learning by doing and experimentation is something I stumbled on three years ago. It has been the single most powerful thing that has driven change at DBS. Last year, we gave KPIs to people saying we needed 1,000 experiments in the company, whatever. It could be a small experiment, big experiment but you’ve got to go try and it doesn’t matter if it works or not. So, we ran 1,000 experiments. We created 100 prototypes; half of them don’t work. So out of the experiments, 60%, 70% never adopt. But it’s just not the point. The point of this is new learning, pedagogy. I’m trying to get people to learn more than trying to get the fruits of the experiment itself.

Finally, underlying all this is this whole issue of culture and the culture is one of learning from mistakes. And I’ve reflected along the way, so what prevents people from embracing this kind of learning and embracing change? And I had an epiphany which really reflected on my parents. My parents are in their eighties and in the last two, three years, they’re doing WhatsApp, they’re doing Google, they’re doing emails, they’re doing Facetime, they’re doing Skype. They’re doing everything with their grandkids and so on. I’m trying to figure out in our personal life whether you’re 80 or 60 or 50 or 40, we’ve all changed. Who here doesn’t do WhatsApp? Who here doesn’t use Uber? We do it in our personal lives. And yet in the work environment, we are reluctant to change. Obviously, the brain is not different, the brain is the same. Then what is different is the environment.

So, you have an environment in your home life, your personal life where you’re willing to take some risk, and you’re willing to take some risk a) because you have some people to help you, your grandkids or your kids come and sit with you and show you how it’s done, and b) the consequences are limited, so if it doesn’t work, it doesn’t work. You shift to the work environment and the consequences could be material or you’re just scared of taking a risk. So, to me the heart of the problem is this problem of culture. How do you create an enabling culture where you encourage experiments and you allow people to make mistakes?
About five years ago we had a problem with our ATMs where some crooks came and they skimmed and they took some money away. The way they do it, they introduce a chip where you put your ATM card and when you take the ATM card, the chip reads all the data so then they can use the data to go and take money away. The ATM companies have come up with a way to solve the problem which is introducing something called a ‘jitter’. The jitter is sometimes when you put your ATM card in and out it doesn’t come out smoothly. It doesn’t come out smoothly because the jitter stops it from coming out. The idea is that should prevent the chip from reading very well so that’s supposed to be the cure. Turns out that our people found that the jitter works in about 10% of the cases, and somebody in the bank had made this trade-off saying, ‘Well, it gives you 10% improvement, but it also takes 10 seconds longer.’ And so the wait time for the customer is not worth it, so they’ve gone and removed the jitters.

When we got scammed we got a lot of questioning from our regulator about, ‘Why did you remove the jitter?’ and, ‘You should hold somebody responsible.’ When we looked at it, it seemed to us that somebody had made a good choice, it was a good decision. You could criticise it, but at least they’d used their brains and they’d taken a decision. So, we said you know, not only will we not punish the person, we’re going to give the person an award. That actually made a big impact on the company. We then went on and created a separate award. We call it the Dare to Fail Award and we give it every year only to those people who screwed up, who tried to do something different and screwed up.

The point I’m making is that I think this way of learning, creating an environment, being willing to experiment, getting your hands dirty, creating a culture of change, responding and adapting – this is how we need to train our workforce. This is the only way we’re going to get our adult workforce to progress to a new world and that is a little bit more than vertical and technical skill training.

So, this is my last slide. Essentially it says whatever you do, you have to keep moving forward, and I am finding that is indeed the case. You don’t have to make big leaps, but as long as you let people at their pace figure and experiment and try and do something and learn a little more each day, they will get there. Thank you.
Symposium Track 1 - Workplace Learning
LEARNING AND INNOVATION AT WORK

Much, if not most, of innovations at work arise through workers’ every day activities and interactions in response to new tasks and challenges they have to confront. As workers respond to these challenges they also learn, because inevitable changes will arise in what they know, can do and value\(^1\). Sometimes, learning leads to them generating innovative practices and, as a consequence, significant change in their workplace. Therefore, in these ways, innovation and learning co-occur at work\(^2\). Those innovations in the workplace are important for responding to new challenges, addressing clients’ needs and responding to changing imperatives and technologies. Without such responses, the continuity of workplaces will be imperilled. So, for innovations at work to progress effectively, there needs to be consideration of this co-occurrence and attempts to align it with particular workplace goals and also those goals associated with individuals’ learning for and through their working life. So, more than securing personal benefits, the provisions of continuing education and training (CET) also need to bring about workplace change through that learning. In this way, it is proposed that CET efforts, as well as those of the workplace, adult educators and learners themselves need to be directed to aligning learning with workplace change.

In making this case, this paper first outlines some premises upon which it is founded. Then, a consideration of what constitutes innovation at work is discussed and also how this has progressed across human history and provided us with lessons on how to proceed. From that, it is proposed that both personal and social factors underpin the process of innovation and learning. Hence, a socio-personal account of innovation and learning is advanced. Following this, some empirical evidence is presented on the kinds and frequencies of the sorts of problem solving in workplaces that are generative of innovations. That evidence includes comparisons between what occurs in Singaporean and Australian workplaces. Given that, and the need to promote such problem solving activities and outcomes, the following sections then give consideration to how these capacities might be promoted in and through work. A particular case presented here is of the need to address relatively low levels of worker discretion in Singaporean workplaces compared with those in other countries. To do this, the analysis of data from the Program of International Assessment of Adult Competence (PIAAC) is advanced to indicate cross-country comparisons amongst Australia, Singapore and Sweden about workplace discretion for workers and their learning. Taking the request from the Ministry...
of Education (MOE) for Singaporean workplaces to continue to ensure that Singaporean workers’ abilities are used effectively, the following sections address the roles in which government, workplaces, adult educators, CET institutions and Singaporeans themselves might take in promoting innovations in and through work. In all, it is proposed that a greater emphasis on work and engagement, discretion, problem-solving and support for all of these to be generative of circumstances that promote innovation and rich learning in work of the kind required for the structured innovative and lean economy to which Singapore aspires.

LEARNING AND INNOVATION AT WORK: SOME PREMISES

Although there is a tendency to view innovation as being associated with new technologies and new discoveries, far from all innovations are de novo or of that kind. Much of it is adaptation, transference and incremental advances. For instance, the OECD(3) defines innovations at work as

“… the implementation of a new or significantly improved product (good or service) or process, … or a new organizational method in business practices, workplace organisation or external relations” (OECD/Eurostat 2005: 46).

In many ways, this definition captures the everyday process which workers commonly engage in when confronted with workplace challenges. As they engage with these challenges they come to remake their occupational practices and sometimes transform them. Yet that remaking and transformation comprise innovations which are also aligned with the learning which individuals do as they engage in work activities and interactions(4). Hence, innovations and learning at and through work are closely aligned, and necessarily concurrent. Such interventions have both personal and workplace imperatives associated with change: i) individuals’ learning and development and ii) changes to workplace processes and practices. Moreover, these two forms of change are interdependent. The workplace requires innovations to arise from workers’ actions (i.e. learning) to continue and be advanced, whilst workers need the workplace to engage with, change and sustain their employment(4). So there is an interdependence between the two which is fundamental to the alignment between their work and learning. In this way, not only are innovations at work far from restricted to new technologies and new discoveries, but workers also now come to apply, adapt, improve on those kinds of innovations to address the needs of specific skills in the workplace. This appears to have been the case across much of human history.

LEARNING AND INNOVATION AT WORK ACROSS HUMAN HISTORY

Workplaces are the most common sites of occupational innovation and learning across human history. They and the learning that arises in them have been central to humanity
and human progress(5, 6). We would not exist today had not workers learnt and innovated to ensure the supply of food, the stability of buildings, the construction of roads, the development of capacities to care for the sick and the needy, to generate the kind of goods and artefacts which we need to survive, but also have enriched human lives and cultures to make them distinct and worthwhile. It is noteworthy that humans have lived in settled communities for over 10,000 years and in cities for 5000 years. This has required the development of occupational capacities to support, secure and give quality to human existence. The development of these capacities is in some way a response to the needs of increasingly sophisticated societies. Yet, it has been only in the relatively recent period (i.e. the last 150 years or so) that the development of occupational capacities has been addressed within educational systems, and even shorter periods of time that the need for workplace innovations has been generated outside of them. Workplaces have always been the key sites of occupational reproduction and transformation. It seems that similar processes of learning and innovation occurred in Europe, Asia and likely elsewhere. Family and local workplaces were the sites for that learning and those innovations in Europe, India(7), Japan(8) and China(9, 10). Let us take a few specific examples.

Early Imperial China had a highly complex and well-organised society that had many cities with relatively large populations (i.e. above 70,000 people) and these were sophisticated and advanced places to live and work. Many had reticulated water, street lighting and sewerage systems, as well as high level of administrative arrangements(10). For instance, in 1085 the Song government’s mint was producing over 6 billion coins a year(9, 11). These coins were produced in three ways and required high levels of organisation and skills. One example is the design and manufacturing of these coins which were innovative in terms of aligning form with function. That is, symbolic qualities of the coin were matched with the requirements of their manufacture. However, by 1114, printed money was being manufactured which led to the closure of 50 copper mines. All of this required significant innovation both in terms of improved technology, but also how that technology was enacted in those work settings. So, in early Imperial China there was a need for mass production which arose far earlier than in other places, it seems(11). One way of addressing this need was the adoption of a modular approach to the manufacture of artefacts, elements of buildings and even the process of writing. Whilst there was undoubtedly major discoveries which permitted the development of new processes, some of which were underpinned by evolving conceptions of science, much of the innovations to secure outcome appear to have occurred within workplaces.

One particular example is that of the famous Terracotta Warriors that were to guard the mausoleum of the first Emperor near the then capital of Xian. These warriors have been found to be numerous, all different from each other in some ways, and were produced locally from local clays, which were of very similar consistency(10). The artisans who made these warriors were the same ones who made water pipes for the city of Xian. They were conscripted for this task and adapted their practices to produce tubes of clay
that were then assembled and moulded as legs, body, arms and head. Each warrior was unique yet it seems that only eight moulds were used to create them(9). So considerable innovation was required to manufacture and make unique these warriors. These were the innovations of those potters. Similar kinds of innovations and learning were found in the Jindezhen Kilns that produced the porcelain for the Imperial Palace which had to be done in very large numbers and each item had to be the same(9). Creating uniformity when dealing with natural products, such as clay, is often challenging and would have required specific sets of skills to achieve uniform outcomes.

Similar practices appear to have occurred in pre-industrial Europe. It seems that innovations were enacted in workplaces and often quite deliberately outside of the control of institutions such as guilds, governments and merchant corporations(12). These practices were referred to as the centuries old tradition of innovation by craft workers: “Craft innovation is an outcome of small-scale incremental practices and experiences and of random variations”(12). One of the reasons these innovations were restricted to workplaces was to make their practices distinct, special or in some way better than rivals and would often be guided with some secrecy(13, 14). Hence, it would have been imperative not to involve outside agencies such as guilds and merchant corporations for fear of losing a competitive quality or advantage. However, these kinds of processes seem to be what occurs in contemporary workplaces and working life. They are responses to changing clientele’s requirements of products, economic environment and circumstances. For instance, earlier in my career, I worked in the clothing industry as a garment designer, which is a technical position. One of the key challenges I faced across my working life was to secure uniform and quality outcomes but within tight requirements of cost, amount of needle time and market tolerance, including quality. A key part of my work for many years was trying to find ways to manufacture garments more efficiently and cost effectively given the threats posed by countries which could manufacture garments far more cheaply. Hence, my every day work was associated with trying to identify deficiencies and innovations in the manufacture of existing products and also build into any new garments efficiencies of different kinds (e.g. limited needle time, reduction in fabric costs and trim and ease in manufacture). Again, these were not the source of developmental activities, but rather every day work requirements.

CONSIDERATIONS FOR ADULT EDUCATORS

Much of what has been discussed above is quite consistent with existing accounts of human thinking and acting which are analogous to those referred to as innovation: new ideas/practices/processes. It is well understood that when humans learn something new – new learning – that this often constitutes innovation from their perspective. Indeed, reference to non-routine problem-solving – advancing a solution to a novel and complex problem(15) is directly analogous to the definition provided by the OECD referred to above. Then, there is what is referred to as ‘far transfer’: being able to apply what you know to a novel circumstance(16). The term ‘adaptability’ – similarly is being able to
adapt what you know, can do and value to novel circumstances or applications (17). Hence, we have understandings about how to address this issue. As foreshadowed, these accounts necessarily suggest that there is a concurrence of personal engagement and change (i.e. learning) on the one hand, and on the other hand, the transformation of workplace practices. These are interdependent, albeit in relational ways (18). Those relational ways can depend upon the particular circumstances and on the capacities of individuals, for instance. Importantly, innovations are also likely to be quite situated in terms of their requirements, with the ability to be and bring about change addressing the kind of goals which are required in specific workplace situations. What may be an innovation in one work setting may be existing practice in another. Given all of this, it would seem that a focus on generating new practices and ways of progressing will be premised very much upon the personal and collective efforts of those in the workplace (19). Not the least here is the need to respond to challenges - problems that arise within the workplace but also within the context of the workplace and outcomes which are well aligned to it.

Findings from the Program of International Assessment of Adult Competence (PIAAC) are helpful in illuminating the extent by which workers engage in problem-solving of the kind that is likely to generate innovations at work (20). In the skills survey, informants were asked to indicate the frequency by which they engage in two kinds of problem-solving activities: i) problems whose solution can be found in less than five minutes and ii) problems that take between 5 to 30 minutes to find a solution (21). The informants were asked to indicate the frequency by which they engage in these kinds of activities: ‘Never’; ‘Less than once a month’; ‘Less than once a week’; ‘At least once a week’; and ‘Everyday’. These kinds of activities are seen as being, respectively, those that are likely to reinforce and refine what individuals know (i.e. up to 5 minutes) and extend that knowledge in ways analogous to realising innovations (i.e. between 5 and 30 minutes). Table 1 sets out data from the Australian PIAAC about the second kind of question on problem-solving activity (i.e. between five and 30 minutes to identify a solution).

Table 1 How often work involves confronting demanding problems (5-30 minutes) by occupations

<table>
<thead>
<tr>
<th>Occupation</th>
<th>N</th>
<th>Never (%)</th>
<th>Less than once a month (%)</th>
<th>Less than once a week (%)</th>
<th>At least once a week (%)</th>
<th>Everyday (%)</th>
<th>Chi-squared p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled workers</td>
<td>1047</td>
<td>18.5</td>
<td>18.6</td>
<td>20.2</td>
<td>30.1</td>
<td>12.5</td>
<td>.000***</td>
</tr>
<tr>
<td>Professional</td>
<td>2541</td>
<td>4.6</td>
<td>13.3</td>
<td>20.4</td>
<td>41.6</td>
<td>20.2</td>
<td></td>
</tr>
<tr>
<td>Technical</td>
<td>40</td>
<td>-</td>
<td>15</td>
<td>12.5</td>
<td>37.5</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Service workers</td>
<td>1499</td>
<td>25.3</td>
<td>22.8</td>
<td>17.7</td>
<td>24.9</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>Operatives</td>
<td>426</td>
<td>32.2</td>
<td>25.8</td>
<td>13.4</td>
<td>18.8</td>
<td>9.9</td>
<td></td>
</tr>
</tbody>
</table>
This table provides an analysis based upon classifications of occupations: Skilled workers, Professional, Technical, Service workers and Operatives. What can be seen from this data is that all classifications of workers engage in non-routine problem-solving of the kind which is generative of innovations on a regular basis. As reported here, in each working week, 43% of skilled workers report engaging in these kind of activities as do 62% of professionals; 73% of technical workers, 34% of service workers and 29% of operatives. Hence, what this data suggests is that all of these classifications of workers engage in or have the potential to bring about innovations in and through their work. Importantly, as with the analysis of frequencies compared with levels of educational achievement, these activities are not restricted to technical and professional occupations and those with higher levels of educational achievement (see Table 2). They are something enacted by all kinds and classifications of workers.

In Table 2, a comparison is made between respondents from Australia and Singapore to both types of problem-solving activities, using the frequencies of range of frequencies: ‘Never’, ‘Less than once a month’, ‘Less than once a week’, ‘At least once a week’ and ‘Every day’. What is indicated in this data is that there are different patterns of worker engagement in the two kinds of problem-solving activities across these two nation states. Different ranges of frequencies are reported by workers from both countries about the frequency in which they engage in the kinds of activities which are likely to be generative of innovations in workplaces. At this point, it probably is most helpful to indicate that there are differences across the perceptions of national population about the degree by which their work incites them to engage in problem-solving activities from which both routine and novel learning arises. Yet, in both countries there is evidence of activities of the kind which are likely to be generative of innovations; the question that remains unexplained is the degree by which those frequencies are different. What is indicated is that cultural, institutional or country specific factors appear to influence the frequency of worker engagement in problem-solving activities.

Table 2  Comparisons between Australia and Singapore in problem-solving activities

<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>Country</th>
<th>N</th>
<th>Never (%)</th>
<th>Less than once a month (%)</th>
<th>Less than once a week (%)</th>
<th>At least once a week (%)</th>
<th>Everyday (%)</th>
<th>Chi-squared p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often work involves confronting simple problems</td>
<td>Australia</td>
<td>5595</td>
<td>4.3</td>
<td>7.2</td>
<td>7</td>
<td>23.9</td>
<td>57.6</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>4444</td>
<td>10.4</td>
<td>11.3</td>
<td>8.7</td>
<td>22.4</td>
<td>29.5</td>
<td></td>
</tr>
<tr>
<td>How often work involves confronting demanding problems</td>
<td>Australia</td>
<td>5587</td>
<td>14.9</td>
<td>17.8</td>
<td>19.2</td>
<td>33.1</td>
<td>15.1</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>4445</td>
<td>19.1</td>
<td>19</td>
<td>15.1</td>
<td>21.6</td>
<td>7.7</td>
<td></td>
</tr>
</tbody>
</table>

35
Importantly, what these data suggest is that workplace innovations are not dependent upon geeks, start-ups, developmental laboratories or research centres (or researchers), because much of it arises through workers’ practice(21). Undoubtedly there is a role for those contributions but in many ways these are likely to be subordinate to the capacities of those working to identify and generate innovations or to adapt new discoveries and technologies to the requirements of the particular work setting.

PROMOTING INNOVATION AT WORK

Given that the differences across these two countries suggests cultural or institutional factors influencing the frequency of worker problem-solving raises the question about how such activities can be promoted. As noted, innovations are about individuals’ learning about and, identification and implementation of new practices. One is unlikely to occur without the other. So we need to understand what kind of factors can promote innovation at work. The human resource development literature suggests that intentional efforts to secure innovations in workplaces need to include employee engagement and development, and workers’ capacity to engage effectively in predicted and unanticipated changes(22, 23). From Scandinavian perspectives, it is held that both routine and innovative practices need to be employee-driven(2). That is, these need to be realized through workers enacting work tasks, confronting new challenges and responding to them(4). These employee-driven innovations can be understood through a consideration of bounded agency(24). That is, the degree to which employees can exercise their agency, within the constraints of the workplace/work practice. Such a conception is important because it is not about workers engaging in ‘anything goes’ thinking and acting, but rather engaging in goal directed activities that are directed towards achieving quite specific work-related outcomes.

THE SINGAPORE CASE

The issues raised here have been the subject of concerns within Singapore government. The Ministry of Education (MOE) and the Ministry of Manpower (MOM) in June 2016 issued the conclusions of its analysis of the PIAAC data and some recommendations. The text within that conclusion and analysis included the following statements:

As Singapore restructures itself into an innovative and manpower-lean economy, employers must play an important role in their workplace practices in areas such as work organisation, job design and management practices. These factors are likely to influence the extent of skills used in the workplace and work productivity. However, employers could make better use of employees’ skills and provide them more room to exercise task discretion, self-direction, and cooperative and influencing skills.

(MOE/MOM 28 June 2016)
These conclusions and analysis are not inconsistent with the ideas mentioned above about employee engagement, and skills utilisation in workplace activities and the degree by which they might exercise discretion in the workplace, greater self-direction, co-working and influencing work practices and outcomes. Such conclusions are consistent with the current policy framing as per the SkillsFuture agenda. As an Annex to this document a table was provided which indicates national comparisons in workplace organisation and practices that might explain the country differences identified in Table 2. In that Annex, a range of scores for workplace organisation are laid out; Singapore features somewhere below the mean, and Australia features somewhere above the mean, but the highest score is reserved for the Nordic countries of Denmark, Finland and Sweden, all of which emphasise the Nordic concept of working life. That conception and practice is about high levels of worker engagement, discretion and decision-making.

It is useful to explore those differences in great detail. Table 3 presents the data on the three measures of workplace discretion from the PIAAC survey across the three countries of Singapore, Australia and Sweden. Those measures are associated with the extent that individuals are able to exercise discretion in: i) choosing the sequence of their work activities, ii) changing their work activities and iii) pacing their work activities.

Table 3 Task discretion by countries - Australia, Singapore and Sweden

<table>
<thead>
<tr>
<th>Task Discretion</th>
<th>Country</th>
<th>n</th>
<th>Not at all (%)</th>
<th>Very Little (%)</th>
<th>To Some Extent (%)</th>
<th>To a High Extent (%)</th>
<th>To a Very High Extent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent to which you can choose the sequence of your work</td>
<td>Australia</td>
<td>5593</td>
<td>10.5</td>
<td>11.9</td>
<td>32.9</td>
<td>22.4</td>
<td>22.3</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>3984</td>
<td>9.8</td>
<td>13</td>
<td>30.2</td>
<td>14.9</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Sweden</td>
<td>3348</td>
<td>2.6</td>
<td>4.9</td>
<td>15.7</td>
<td>27.6</td>
<td>24.1</td>
</tr>
<tr>
<td>Extent to how you can change main work tasks</td>
<td>Australia</td>
<td>5591</td>
<td>9.6</td>
<td>13.5</td>
<td>35.1</td>
<td>23.7</td>
<td>18.2</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>3984</td>
<td>7.9</td>
<td>10.4</td>
<td>30.7</td>
<td>18.2</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>Sweden</td>
<td>3345</td>
<td>2.4</td>
<td>4.4</td>
<td>12.9</td>
<td>31</td>
<td>24.1</td>
</tr>
<tr>
<td>Extent to which you can change the pace of your work</td>
<td>Australia</td>
<td>5593</td>
<td>8.8</td>
<td>15.6</td>
<td>33.2</td>
<td>24.6</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>3984</td>
<td>5.7</td>
<td>11.3</td>
<td>31.4</td>
<td>19.2</td>
<td>6.2</td>
</tr>
<tr>
<td></td>
<td>Sweden</td>
<td>3348</td>
<td>3.6</td>
<td>8.7</td>
<td>23</td>
<td>23.1</td>
<td>16.4</td>
</tr>
</tbody>
</table>

Note: *** denotes p<.001

What is indicated here is that these measures of worker discretion are distributed asymmetrically across these three countries indicating, in particular, forcing support that workers perceive restrictions upon their thinking and acting of the kind which is required to meet the goal stated by MOE and MOM.

Similar patterns are found in responses to the processes of learning through work across the working week, as presented in Table 4. Across analysis of these data, it has been found that workers generally report learning more frequently through their own
activities and interactions than being directly assisted by an expert or supervisor. That is, workers report mediating their own learning more frequently than others (21, 25). Here again, the data indicate that the circumstances or conditions in which workers report participating in either being guided in their learning by others or through their own efforts differ across the three countries. Australia has the highest level of reported learning across the working week in both forms of learning (i.e. supported by others and mediated by individuals). In most categories except two, Sweden reports the highest frequency. These figures are quite consonant with those of Table 3. This might indicate as has been argued in many situations that the degree of discretion and the learning that arises from it are correlated in some way.

Table 4 Processes of learning by country - Australia, Singapore, and Sweden

<table>
<thead>
<tr>
<th>Learning at work</th>
<th>Country</th>
<th>n</th>
<th>Never (%)</th>
<th>Less than once a month (%)</th>
<th>Less than once a week (%)</th>
<th>At least once a week (%)</th>
<th>Everyday (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often you learn from co-workers and supervisors</td>
<td>Australia</td>
<td>5053</td>
<td>9</td>
<td>20</td>
<td>20.9</td>
<td>26.7</td>
<td>23.4</td>
</tr>
<tr>
<td></td>
<td>Singapore</td>
<td>3663</td>
<td>9.8</td>
<td>17.4</td>
<td>12.1</td>
<td>16.2</td>
<td>12.4</td>
</tr>
<tr>
<td></td>
<td>Sweden</td>
<td>3173</td>
<td>3</td>
<td>12.3</td>
<td>18.7</td>
<td>23.2</td>
<td>13.8</td>
</tr>
<tr>
<td>How often job involves learning by doing through</td>
<td>Australia</td>
<td>5586</td>
<td>6.4</td>
<td>15.5</td>
<td>15.8</td>
<td>21.1</td>
<td>41.2</td>
</tr>
<tr>
<td>performed in job</td>
<td>Singapore</td>
<td>3985</td>
<td>9.8</td>
<td>13.7</td>
<td>9.6</td>
<td>15</td>
<td>25.8</td>
</tr>
<tr>
<td></td>
<td>Sweden</td>
<td>3343</td>
<td>1.6</td>
<td>10.1</td>
<td>16.6</td>
<td>25.7</td>
<td>20.9</td>
</tr>
</tbody>
</table>

Note: *** denotes p<.001

All of this suggests that to achieve the kind of outcomes that Australian and Sweden reports, changes may likely be required within Singapore in workplaces, but also in approaches taken by the CET system, its educators and also by Singaporeans themselves. So, in the next section, and building upon these findings and the conceptions about learning and innovation set out earlier, consideration is given to: what governments can do; what workplaces can do; what adult educators can do, and what Singaporeans can do to enhance the prospect for innovation and learning co-occurring in Singaporean workplaces. These are nothing more than a set of suggestions, although they draw upon findings and experience from elsewhere. Others are likely to come up with different items and suggestions.

WHAT CAN GOVERNMENT DO TO ACHIEVE MOE’S AND MOM’S GOALS?

Governments have various levers and forms of leverage that comprise encouraging, supporting, rewarding, mandating and legislating. Given the extent of the changes required it is likely that combinations of these strategies will be required. For instance, there may be a need to institute policies such as SkillsFuture with an emphasis on workplace
discretion and learning in Singaporean workplaces that focuses on engagements between continuing education and training institutions and workplaces to achieve these kinds of outcomes. There could be rewards such as prizing innovations (e.g. Innovative Enterprises; Innovative Workers, Innovative Teams), that could recognise innovations and learning in these ways. There may be financial leverage and support to encourage a culture that more greatly values workers' skills, their learning and further development that can be supported through funding. Mandating performance indicators associated with the generation of innovation in workplaces might be enacted in institutions that are directly funded by government (e.g. Polytechnics, ITE, schools). Importantly, there might also be a shift from a policy to a practice focus.

WHAT CAN HAPPEN IN THE WORKPLACE?

The data above suggests that there is a need to change some practices within workplaces to support all kinds and classification of workers’ engagement and learning, and to work in ways that support innovation and learning. It is worth noting that the two countries that arose most strongly after Second World War were Germany and Japan. Although these countries received significant financial support to bring about their reconstruction, the success, albeit in two very different models, had some common features. These were, a lot of hard work, engineers and production workers collaborating together at the point of production and innovation(26). That is, occupational barriers were reduced and collaboration at the point of production became an important feature, in rebuilding industrial capacity and innovating in ways which led these two nations to dominate manufacturing and production in the post-war period. Beyond these examples there are those from individual workplace studies. For instance, Darrah(27) reports that in a ‘high-tech’ workplace in California that produce computers, the engineers were given great discretion, championed as being innovators and enjoyed very good work conditions which included extensive opportunities for professional development. The opposite was true of the production staff, who were far less well remunerated, their work was not championed and they were not afforded opportunities for ongoing learning. Yet, Darrah identified that these production workers had to engage in flexible and innovative work practices to achieve production goals(27). He concluded that, in fact, these production workers had to generate innovations on a daily basis to achieve the production outcomes in the computer plant. Again, workers which might be taken as ‘mere production workers’ or ‘rank-and-file’, when consideration is given to the nature and kind of their work, indicates that their work was highly complex and demanding, they were learning much through it and it comprised inherently identifying and enacting innovations. Of course, occupations are likely to vary in degree of discretion they can afford workers (some extensive, others quite limited). Some work is highly regulated for health and safety reasons with workplace discretion and problem-solving as well as innovation, being limited to the bounds within that highly regulated work. So, there are
likely to be different kinds and extent of the scope of problem solving and innovations that can be enacted across the range of work and workplaces.

Some workplaces deliberately encourage employees to promote innovations: utilizing them to secure improvements in quality of goods and service; and secure greater workplace engagement(28). Much of this appears to be associated with the workplace environment that can be established and maintained. For instance, it has been found that small to medium-sized enterprises that stand the test of time often have a work environment which is familial. Workers feel valued, want to contribute and want to sustain the workplaces’ viability(29). The quality of the environment is important because although innovation is highly prized it can be risky. Mistakes will be inevitable as workers engage in new practices, as they have not been proven over time. Some tolerance of errors, ambiguities and failures is, therefore, required(30).

From all of this, it suggests that Singapore workplaces may well be wise to afford greater discretion to their workers and more often seek advice from and be advised by these workers. In addition, perhaps efforts to work more inter-occupationally and to overcome hierarchies of occupations in achieving common workplace goals and the development of workers’ capacities might be helpful. Certainly, the focus on individual workplaces as sites of innovation (sites of service and production) seems to be important because rather than relying upon innovations coming from outside, much can arise within workplaces and even new technologies and processes will most likely require being tailored to the needs of specific workplaces. Central to all of this is structured efforts to break down occupational hierarchies and promote discretion for all kinds of workers and as directed towards securing innovations at work and their effective implementation. Of course, none of this is particularly new and there are sets of arrangements which can be enacted to utilise or institutionalise workplace activities for the sharing of ideas and perspectives to occur. Emphasised here then is the effort to create workplace environments in which workers want to learn and innovate.

WHAT CAN ADULT EDUCATORS DO?

Singapore has a strong advantage here over many other countries. The existence of a broader cohort of Adult Educators who often work as consultants and are used to delivering educational experiences in work settings is particularly helpful. So, there is a range of Adult Education practitioners who are very familiar with workplaces, work related learning activities and ways of engaging in workplaces to secure outcomes such as innovations and worker learning. However, it will be important that these Adult Educators adopt and utilise pedagogies that promote and necessitate worker agency and intentionality when engaging in learning and innovation. What is evident in the data presented earlier is that much of the learning arises through everyday work activities and this is associated with worker discretion, to some degree(21). Hence, it is not
necessarily about having training regimes within workplaces. Instead those regimes
should be about activities that promote learning which might include but also might
exclude direct training. Hence, the use of a range of practice-based pedagogies, practice
curriculum and strategies for understanding the requirements for work and for engaging
and transforming that work is likely to be helpful. Strategies such as guided learning,
learning circles, project-based learning, and working in teams can assist to achieve these
outcomes. However, beyond the directly work-related educational intents and processes
there is also a need to focus on the development of learners’ personal epistemologies.
That is, how they think and act, and engage in intentional learning. Workers who are not
intentionally seeking to learn, remake and innovate may well require some assistance
and guidance. That is why pedagogic approaches which focus on learner engagement
and the development of that agency and intentionality is likely to be for achieving the
kinds of goals set out by the MOE and MOM.

So, consistent with the work which many Adult Educators are currently engaged in,
supporting workplaces by acting as workplace change agents (i.e. supporting learning
and innovation) are likely to be well directed here. Also, Adult Educators are well
positioned to evaluate the processes and outcomes of such activities in workplaces.
Then, if required, these Adult Educators are also well placed to assess and certify
learning and innovations in ways which can give recognition at the workplace, work
team or individual levels.

WHAT CAN CET INSTITUTIONS DO?

Within a systemic initiative such as that requested by the MOE/MOM document, it will
probably be necessary for CET institutions to play important roles. This extends to
supporting workplace learning/innovation projects, change agents (i.e. preparing staff as
workplace consultants) and promoting learning and innovation, just as is occurring with
the SkillsFuture initiatives. A key element of the role to be played by these institutions
might be directed towards supporting innovations and learning in workplaces, through the
provision of experiences, hosting Adult Educators and engaging with local enterprises.
Yet, there is also another important role associated with students within the polytechnics
and ITE, for instance. This includes developing the kinds of capacities within students to
position them effectively as both learners and innovators in the workplace. Engaging with
workplaces to promote and support learning and innovation in workplaces will underpin
much of the likely success within these strategies and approaches. Many of these
institutions have very positive and productive ongoing working relationships with the
workplace. As is currently the case, it may be helpful to engage students in work-based
projects that are now being required in the third year of diploma programs and also the
range of practice-based experiences students are having and to use educational and
teacherly processes to explicitly focus on their abilities to be effective innovators and
learners in the workplace setting. Then, there is also the need for these institutions to
be the basis of recognising and certifying workplace learning and the development of workplace initiatives. Hence, schemes associated with encouraging and recognising the alignment between learning through work and workplace innovations should be put in place.

**WHAT SHOULD SINGAPOREANS BE DOING?**

Of course, all of these institutional efforts will be of little impact unless Singaporeans engage fully and wholeheartedly in learning and generating innovative practices in work settings. Given its central role in the exercise of individuals’ conscious intentional engagement in these activities, it is important that workers recognise the importance of their engagement and identify how to secure both personal benefit and workplace change through their work activities and interactions and, where necessary, explicit CET programs and processes. The evidence gathered in an older workers’ study in Singapore indicates that workers want to learn, want to be seen to be current and competent, and want to engage in a workplace which welcomes their contributions. The evidence suggests that not only are these workers encountering and addressing changing work requirements, but that they are making important contributions to their workplace in so doing. However, what they request is that their contributions are valued and respected and that they are engaged with in ways which reflect that worth and respect. For instance, many of these workers suggested that how they wanted to learn to respond to workplace changes was not through training programs but, to meet with others from whom they could learn, and also that they could assist others learning in a way which is shared and reciprocal rather than being taught. For instance, the concept of dialogue forum seems to capture well what these workers suggested and would be an effective means of engaging their contributions(32, 33). That is not to say that these workers would not welcome support and contributions of others, but how these are provided to them is likely to be important. Most centrally, this relates to processes that respect and engage with their contributions.

**LEARNING THROUGH WORK AND INNOVATION TO REALISE EFFECTIVE WORKPLACE OUTCOMES**

It has been proposed in this paper that innovation at work needs to be seen as being as much about adoptions, refinements and applications as de novo or induced changes. Moreover, these kinds of innovations arise through workers’ engagement and learning rather than a simple process of adoption. Local requirements, necessary changes and accounting for situational factors will be inevitable qualities of the implementation of even de novo or technical changes. Yet, more than that it is workers engaging in their everyday work activities that generate the kind of innovations which can support and assist the continuity of their workplaces, and perhaps never more so than in the current
era of constant change in work and occupational requirements and the frequency with which these challenges arise. Therefore, to achieve the kinds of goals that MOE/MOM want and SkillsFuture captures, it will be important to position much of learning and innovation at work as arising from the acts of workers. Therefore, it will be important for Singapore in workplaces to provide the environment and mechanisms for learning and innovation as part of everyday work activities. It will be this every day set of interactions and activities which is likely to yield these outcomes, as much or even far more than training interludes alone. All of this requires a change in the focus of CET provisions and goals. Of course, much of this is already understood and previous and current initiatives are addressing that change. There seems to be particular roles to be played by Adult Educators and CET institutions when engaging with workplaces and workers to support the co-occurrence of innovations and learning. Then, and as importantly, Singaporean workers require and need to direct their interest when identifying, developing and enacting the innovations through which they learn and also sustain the viability of their workplaces. In sum, to achieve the kinds of goals that the MOE/MOM propose requires effort across government, workplaces, Adult Educators, CET institutions and workers themselves. However, the data suggests that all of this is about improving what is already occuring. That is, extending the extent and scope of everyday learning and problem-solving that arises in Singaporean workplaces to achieve these goals. There is nothing in the data which indicates that there are structural imperatives that would inhibit this outcome. Instead, it is a question of empowering workers - to use that kind of terminology. In particular, it seems important in what is often referred to as the rank-and-file of Singaporean workforce being positioned to have more discretion and engagement in identifying and enacting solutions to problems in the workplace that can achieve viable enterprises and a nation state that is responsive to the changing economic environment.

REFERENCES


INTRODUCTION

Workplace learning, occurring mainly through work-related interactions, is imperative for small-medium enterprises (SME) that grapple with labour shortages, skills shortages and new and enhanced skill requirements for employees (Goldenberg, 2006). This paper aims to examine the enablers and barriers to workplace learning for SMEs in Singapore and analyse the benefits of workplace learning interventions catalysed by external performance consultants. The findings contribute to the relative paucity of literature on how SMEs can be better supported through external consultancy to harness the benefits of workplace learning.

Background

Few SMEs have established learning and development structures and specialised trainers or human resource personnel are seldom deployed to SMEs (Ashton et al., 2008). For such organisations to foster a more invitational workplace, it is essential to scrutinise the norms and practices of the workplace and how they contribute to high performing organisations. Doing so requires SMEs to afford access to and collaborate with an external Continuing Education and Training (CET) practitioner in designing and enacting interventions aimed at using the “challenges of work itself, the organisation of work and the social interactions at work” (Hoyrup & Elkjaer, 2006, p.29) as the wellspring of improved individual work and organisational performance.

The Institute for Adult Learning (IAL), developed the Learning@Work Boot Camp initiative to partner enterprises in adopting workplace learning to enhance business outcomes and develop workplace learning facilitation capabilities among CET practitioners. As a certification requirement, IAL deployed ‘trainee’ Workplace Learning Specialists (WLS), mainly freelance adult educators, to work with enterprises in diagnosing and scoping performance issue(s), co-creating, implementing, and evaluating a workplace learning intervention to address the issue(s).

Purpose and Research Questions

While there is extensive literature on workplace learning and how it is contingent on the reciprocal relation between individual agency and affordances of the work site (Billett, 2006), understanding how to promote workplace learning within from without is still
emergent. Hence, this research study aims to develop insights into the following questions:

a) What are the common enablers and barriers to effective adoption of workplace learning among enterprises who participated in the Learning@Work Boot Camp?

b) How did the Learning@Work Boot Camp benefit the organisation and individual from the perspective of key stakeholders?

The findings can inform the refinement of similar initiatives to support enterprise adoption of workplace learning. Specifically, it serves to clarify key success factors and the range of anticipated and unanticipated benefits and challenges of externally catalysed workplace learning interventions.

Data Collection and Analysis

Considering that the study aims to analyse enablers and barriers to workplace learning and the benefits of the Learning@Work Boot Camp from the perspective of key stakeholders, qualitative semi-ethnographic and case study approaches were chosen to achieve the research aim. As shown in Table 1, five enterprises were selected from the service industry due to common industry challenges such as lack of manpower, the need to develop staff confidence and confidence to handle increasingly demanding clientele, and foster the need for consistent service standards.

<table>
<thead>
<tr>
<th>Name of Enterprise</th>
<th>Industry (Target Business)</th>
<th>Enterprise Decision-Maker</th>
<th>Enterprise Project Lead</th>
<th>Workplace Supervisors and Learners</th>
<th>Workplace Learning Specialists (WLS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIY Ezy</td>
<td>Retail (Hardware Stores)</td>
<td>1 (Jeremy)</td>
<td>2 (Andy and Jeff)</td>
<td>3 supervisors and learners</td>
<td>2 (Kay Sang and Fabian)</td>
</tr>
<tr>
<td>ACE Services</td>
<td>Facilities Management (Housing Estates Maintenance)</td>
<td>1 (Chun Tat)</td>
<td>2 (Chee Meng and Annie)</td>
<td>4 supervisors and learners</td>
<td>2 (Joanna and Kevin)</td>
</tr>
<tr>
<td>Byrnes International</td>
<td>Hospitality (Serviced Apartments)</td>
<td>1 (Will)</td>
<td>2 (Rita and Sally)</td>
<td>3 supervisors and 2 learners</td>
<td>2 (Penny and Steve)</td>
</tr>
<tr>
<td>Stella Food &amp; Beverage Group</td>
<td>Food and Beverage (F&amp;B) (Restaurant - IndoAjan)</td>
<td>1 (Kelvin)</td>
<td>3 (Emily, Wendy and Peter)</td>
<td>1 supervisor and 6 learners</td>
<td>2 (Kate and James)</td>
</tr>
<tr>
<td>Amour Restaurant Group</td>
<td>Food and Beverage (F&amp;B) (Restaurant - Rosa Blu)</td>
<td>1 (Patrick)</td>
<td>2 (Jim and Richard)</td>
<td>3 supervisors and 3 learners</td>
<td>2 (Kally and David)</td>
</tr>
</tbody>
</table>

| Total              | 5 | 11 | 25 | 10 |

Table 1. Interview respondents (pseudonyms)
LITERATURE REVIEW

Factors Affecting Workplace Learning

Harnessing workplace learning involves a confluence of factors related to the nature of working and learning as human and social activities. Eraut (2007, p. 417) highlighted “the overwhelming importance of confidence” based on his research findings and further explains:

…much learning at work occurs through doing things and being proactive in seeking opportunities; and this requires confidence. Moreover, we noted that confidence arose from successfully meeting challenges in one’s work, while the confidence to take on such challenges depended on the extent to which learners felt supported in that endeavour by colleagues, either while doing the job or as back up when working independently. Thus there is a triangular relationship between challenge, support and confidence. (Eraut, 2007, p. 417)

Eraut (2007) classifies these three elements as ‘learning factors’, which are affected by ‘context factors’ such as how work is assigned, with whom the individual interacts or what level of performance is expected. Figure 1 illustrates how each context factor influences a corresponding learning factor and also how one learning factor affects another.

![Figure 1. Factors affecting learning at work: the two triangle model (Derived from Eraut, 2007, p. 418)](image)

Based on Eraut's model, enablers and barriers of workplace learning are divided into three broad categories: work(place), pedagogy and learner. These categories are aligned with the three learning factors in Figure 1: work(place) for challenge, pedagogy for support and learner for confidence and commitment are influenced by the other learning factors such as challenges or...
support. Additionally, the learner’s engagement level reflects the learner’s motivation comprising confidence and commitment, which is shaped by the factors derived from all three categories of enablers and barriers as shown in Figure 2.

**Enablers and Barriers of Workplace Learning**

*Figure 2. Enablers and barriers of workplace learning*

**Benefits of Workplace Learning**

Given that enterprise management often prioritise markets and competitive strategy over staff learning (Hodkinson & Rainbird, 2006), it is unsurprising that how senior management shapes the structures and processes for workplace learning and how it is interpreted and enacted by middle managers and eventually experienced by rank and file employees may not be aligned. Instead of seeking to attribute productivity gains to formal or informal training, Evans et al. (2011) posits that it may be more useful to assess the benefits of workplace learning through the lens of employee job satisfaction and engagement with the workplace. Workplace learning can engender new knowledge-linkages, creative solutions and innovation and therefore contribute to the drive toward more lifelong learning (Hager, 2001; Livingstone, Mirchandani, & Sawchuck, 2007).

Given that the benefits of workplace learning could comprise subjective and objective outcomes, it is essential to analyse the perceptions of stakeholders, especially those directly impacted by workplace interventions. Notwithstanding that, stakeholders’ perceptions of benefits and effectiveness are “value judgments based on an evaluator’s personal beliefs, interests, and experiences” (Michalski and Cousins, 2000, p. 213), it is still useful to deduce common patterns across different workplaces and learners.
FINDINGS AND DISCUSSION

This section of the paper discusses key findings from the case narratives detailed in Annex A developed to represent the experience of Learning@Work Boot camp from the perspective of different stakeholders. The DIY Ezy narrative examines the perspective of a decision maker whose beliefs, values and considerations, especially pertaining to the importance of training that promotes staff engagement and ownership to continuously learn on the job, were visibly demonstrated throughout the workplace learning initiative and instrumental to its success. The ACE Services narrative explores the motivation of participants from a facilities management company involved in implementation. The workplace supervisor’s dramatic shift from initial apprehension at being singled out for participation in the intervention to obtaining affirmation of her experience and expertise in her job (and inspiring an intern in the process), highlights the contested nature of workplace learning. Written from the perspective of the WLS, the Byrnes International narrative epitomises the common barriers faced by external intermediaries when seeking to shift workers’ mindsets, habits and communication style to accommodate new workplace learning practices. Finally, the Stella Food & Beverage Group and Amour Restaurant Group narrative juxtaposes the perspectives of the outlet manager in each enterprise to compare the commonalities and differences and to present how different factors affected the stakeholders and the project outcomes.

Enablers and barriers

As each project passed through new stakeholders and evolved with the uncovering of new information and implementation of interventions, new enablers and barriers to workplace learning emerged.

Firstly, a sustained and focused effort in understanding the workplace context during the diagnosis stage was important. This stage yielded important insights on daily processes such as bottlenecks and heuristics and allowed the project team to uncover compelling performance issues that directly impacted staff’s daily experience at work.

Secondly, an important enabler was constant communication among all participants in the project. As the projects moved from diagnosis to scoping to implementation, new participants were involved. Taking time and effort to communicate with these stakeholders helped them to understand the intent and manage their expectations. Communication fosters development of trust which was essential for the WLS to obtain the support of the enterprise stakeholders, especially the managers/supervisors who were expected to drive implementation.

Thirdly, a key factor enhancing or hindering workplace learning was the wide range of individual dispositions encountered in all projects. There were forward-looking enterprise decision-makers like Jeremy from DIY Ezy, but equally there were those
who were less forthcoming about their organisational issues. Project participants were also predisposed in different ways. Some were resistant to the new changes in work processes and behaviours, while others saw it as an opportunity to learn new things and improve work performance. In general, individual motivation was boosted when the intervention was designed to be palatable and based on realistic expectations from the enterprise management; being empathetic of ground constraints and workload (and not only valuing what was scalable and efficient for maximum organisation impact) was important for securing and maintaining the support of workplace learners.

Fourthly, common barriers which hindered all the five organisations from being more intentional in their workplace learning efforts were the immediate day-to-day business pressures such as lack of manpower and lack of time for deliberate learning on-the-job.

While all organisations agreed that management support was crucial to signal the importance of learning for the business and the project, the findings suggest that 'workplace learning' was still perceived as an 'event' located outside daily work practices and processes. Notwithstanding that Learning@Work Boot Camp advocates learning through work and for work, it is critical for the WLS to manage enterprise expectations of the need for upfront investment of time and effort to acculturate staff to new workplace pedagogies. Only when these practices become habitual and part of the social fabric of the workplace will they cease to be deemed an imposition on time and resources.

**Benefits of Workplace Learning**

In this study, workplace learning was engendered externally through the WLS and eliciting enterprise management buy-in of its benefits was crucial to the intervention’s longevity. While the assumption that individual learning and knowledge are commodities (Gherardi & Nicolini, 2000) primarily intended for organisational competitive advantage is still pervasive, the benefits of workplace learning as perceived by the Boot Camp enterprise stakeholders generally had little to do with improvements in business indicators. In fact, workplace learning interventions may inadvertently provoke cynicism among enterprise management and staff if invoked as a quick fix to performance issues or business indicators that cannot be addressed solely through enhancing staff capability.

As testimony to the perceived effectiveness of the interventions, four out of the five enterprises made concrete plans at the end of their projects to scale up for implementation across more outlets and branches. Effectiveness of the enterprise projects was often construed in terms of direct benefits to individuals, which was critical for securing management support to scale up the intervention for more significant organisation impact. The enterprise project leads, in their middleman role, shared about the adaptability of their projects, with many reflecting that they had picked up new skills and knowledge relevant for their job. Rather than advocating large scale changes that
would likely put off managers and staff, starting with targeted interventions to harvest personal testimonies and whet the appetite and confidence to do more seemed to be a common success factor.

Furthermore, in response to enterprise need for standardisation and consistency of service standards, many of the interventions were designed to codify knowledge and improve the adoption of standard operating procedures through enhancing knowledge curation, dissemination and creation. Notably, most of the interventions struck a balance between converting tacit knowledge to explicit knowledge through the creation of artefacts as well as leveraging social platforms that mitigate the risk of knowledge reduction because it “utilizes the linear design process, which simplifies complex tasks into procedures” (Janassen cited in Li et al., 2008, p. 350). Given that knowledge generation is a dynamic process situated in specific social contexts which include subject of learning, artifacts, and social others (Ardichvili and Yoon, 2009), fostering ongoing collegial sharing of best practices and just-in-time solutions is equally, if not more important than, mere knowledge codification.

Finally, all IAL WLS on the five projects expressed satisfaction with their participation in the Boot Camp. They relished the opportunity to partner an enterprise at such a deep and long level. The chance to move through the four stages of diagnosis, co-creation, implementation and evaluation with a real-life client taught them knowledge and skills related to adaptability, listening, managing change, dealing with stakeholders at all levels, and evaluation.

**REFLECTIONS AND IMPLICATIONS**

In analysing the findings from the five enterprise case studies, key elements of theoretical discourse on factors impacting workplace learning were validated. New insights on the practical challenges of driving workplace learning include necessitating a balance between enhancing the learning conditions of the workplace, engaging individual agency and accentuating the pedagogical affordances of the work itself. With the aim of extending current discourse, the penultimate section of this paper details reflections and recommendations pertaining to the research foci, specifically enablers, to promote workplace learning within from without, including potential benefits to the individual and organisation when done well.

While this paper’s findings is premised on the Learning@Work Boot Camp, much of the learning can be extrapolated to inform policy–making and practice so as to better support resource-lean SMEs who may rely more on external support for staff training and development. Figure 3 below fleshes out the critical factors that reinforce a virtuous cycle between all components to enhance benefits for the individual and organisation.
Specific principles were also identified as being critical for the WLS (and equivalent) or training provider to apply so as to secure the traction needed to enhance the invitational qualities of the workplace.

**Systematic analysis and constant stakeholder engagement**

Three levels of analysis are required for a comprehensive assessment of current reality and for co-creation of interventions that resonate with the enterprise stakeholders. First, a thorough organisation analysis which will entail ascertaining the organisational objectives, culture, vision, human and financial resources and management style is required. Second, job analysis, achieved through clear understanding of the roles and responsibilities of the given job role vis-à-vis the required competencies has to be undertaken. Lastly, learner analysis, essentially understanding the individual abilities and/or of the socio-cognitive and relational dimensions that may interfere with the efficacy of a learning programme. These analytical dimensions are critical for workplace interventions to be seeded sustainably in the situated nature of the workplace (Manuti et al., 2015).

**Be user-centric and manage change by results**

As can be seen, the more effective interventions are outcomes of continuous negotiation between what management deems to be issues worth tackling and what ultimately
matters to individual workers, including job satisfaction and self-efficacy. The solution is also optimised when it adopts a different approach to accomplishing work tasks in a manner that boosts the self-efficacy of individuals and creates a virtuous cycle that promotes motivation for further learning. This reinforces the critical importance of adopting a bespoke approach to the execution of the intervention to accommodate a range of personal epistemologies, priorities and expectations. It can only be achieved with time being invested by the WLS to immerse himself in the work environment, engage with the enterprise staff to understand their motivations, and subsequently partner key stakeholders such as the supervisors to build their confidence and competence to do more with progressive improvements.

**Engage managers and supervisors as the catalyst for change and provide scaffolding and support**

In virtually all the enterprise case studies, the key drivers and enablers of the workplace learning interventions were enterprise staff who assumed managerial or supervisory roles. As evident from the Learning@Work Boot Camp, engaging managers and tapping on their inherent beliefs and perceptions of their role is critical as “what would be development for one person would be a burden for another” (Silverman, 2003, p 47). Hence, it is essential to position workplace learning interventions as accruing specific benefits to the managers who may be expected to shoulder the burden of “extra work” needed at the onset of any intervention for longer-term time savings and benefits of managing a more high-performing team.

**Foster collaborative social learning**

Not unsurprisingly, most of the workplace learning interventions introduced in the five enterprises involved varying degrees of social and collaborative learning, such as the CoPs in Stella Food & Beverage Group and the daily morning briefs in DIY Ezy, which also had a positive impact on team bonding and job engagement. For the individual, engagement in social learning activities delivers opportunities for co-construction of knowledge and meaning from the situation. By including others’ perspectives, the own, possibly limited, perspective is extended. Moreover, communities of practice may also give individuals access to wider networks of people who can ‘coach’ them to improve aspects of their performance even in the absence of their formal supervisor cum coach (Lindkvist, 2005).

**Create a virtuous cycle between enablers and benefits of workplace learning**

Finally, it may be more compelling to posit the creation of a virtuous cycle as the key value proposition of driving workplace learning; for example, enhancing managerial
capabilities to provide coaching and feedback can promote performance, and in turn, individual motivation to exercise more personal agency, resulting in higher optimization of learning opportunities at work and hence strengthening an organization culture of learning and performance. In fact, Raelin (2007) notes that “performativity at the corporate level becomes deformed when corporate agents forget the value of honouring the individual and his/her dignity in their need to grasp for efficiency and predictability” (p. 507). Rather than impose unrealistic expectations on individuals by positing productive outcomes as the end goal of workplace learning interventions, performativity tends to emerge as an indirect benefit, as evident from research accounts that track returns of investment (eg. cost savings) from action learning and other related practice–based learning (Raelin, 2000).

CONCLUSION

This paper has attempted to extend current discourse on enablers and barriers to workplace learning, paying special attention to how they are manifested in SMEs in the service industry and negotiated by external intermediaries seeking to catalyse changes in workplace practice from without. In particular, it fleshes out the mutually influencing relationship between the workplace, learner and pedagogy by highlighting key success factors needed to foster meaningful gains for the individual and enterprise.

REFERENCES


**ANNEX A**

**Case Study 1 – DIY Ezy**

DIY Ezy is a home-grown SME specialising in do-it-yourself home improvement, with stores dotted all over Singapore. Despite facing a manpower crunch, increasing rent and a generally dismal retail scene in the last few years, DIY Ezy has continued to sustain its business, while it looks for ways to ensure its business model remains viable in the long run.

Jeremy is the General Manager of DIY Ezy. With a long, successful career in sales, he is always on the lookout for ways to improve DIY Ezy’s bottomline. To do this, Jeremy tries to be as ‘hands-on’ as possible. He visits the stores to observe store traffic and staff interaction with customers. He personally helps out at warehouse sales and in stores when they are short-handed. He even created a Whatsapp group for his store managers so that they have a direct line of communication to raise issues and suggestions. Through all his observations, Jeremy has amassed close knowledge of the ins and outs of the business, a fair reading of the motivations and hesitations of his staff and a big-picture understanding of the culture in the company.

Jeremy is a firm believer in learning, as he had witnessed for himself how the right learning opportunities had transformed him from a shy person into a top salesperson in his previous company. At the same time, Jeremy understands that not everyone is like him, driven and always open to questioning and new learning, and that human nature dictates that people will develop their own habits and preferences.

Before the Boot Camp began, Jeremy’s main worry was that different stores were doing different things, making training and succession difficult and inconsistent. He knows that it is important for staff at all levels to understand implications of what they do for their colleagues and their business, but recognized that it is not easy to make that happen. When the Boot Camp came along, Jeremy thought of it as an opportunity to look at learning as a way to raise the standards and “consistency of training” which in time to come will improve staff engagement and business outcomes. He said, “The culture I want to grow in DIY Ezy is the understanding that learning is a continuous effort. It cannot start somewhere and end somewhere. It never ends, learning never ends.”

True to his word and deed, Jeremy sang a consistent tune throughout the project. He was heavily involved in ensuring alignment of his staff as he took on this project, role-modelled openness to learning, supported the project team from diagnosis to evaluation, and showed time and time again a deep appreciation of how learning is crucial to any business.

Jeremy carefully selected and quickly gathered two of his staff to head the workplace learning project. At the beginning, he took an active role in shaping the scope of the project. He demonstrated a willingness to listen to the team (made up of two of his
staff and two IAL WLS) before he decisively and swiftly nailed down one particular DIY Ezy store to carry out the project. Throughout these early stages, Jeremy showed an astute sense of judgement in balancing the intent of the project, the conditions of the workplace and the “willingness of the people”. He was very clear about the relation of learning to engagement, and engagement to performance. He shared that the success of the project is dependent on “how engaged they are – are they engaged in the job? So if they’re engaged in their job, they’ll take this training seriously.”

After a period of fact-finding, diagnosis and brainstorming, the project team designed and carried out a daily in-store learning curriculum on product knowledge and customer service. The staff in the store took turns every morning before the store opened to share their knowledge of one particular product, from its features to how to operate it to frequent questions asked by customers. A short video was recorded on an employee’s mobile phone and shared on the store Whatsapp group. Similarly, staff used role-play to learn about dealing with different requests from customers, and these videos were uploaded to Whatsapp as well. This workplace learning structure was intended to help staff learn from each other in an informal, yet structured and fun way. The project was carried out almost every day for a month.

At the end of the project, the team began their evaluation. At this point, one of the DIY Ezy project members updated Jeremy on the outcomes, which included no discernible improvement in the sales figures at the selected store. Jeremy’s first reaction was one of bemusement, but he quickly recovered when his staff shared that there were other positive outcomes, though they were not related to anything as concrete as sales.

At the final project presentation, Jeremy was pleased to note that self-assessments of the store staff in their confidence in handling customers and product knowledge have gone up, and that the store supervisor had reported not only a higher level of engagement, but that the staff at the store had bonded as a result of this daily group learning activity. Jeremy quipped, “I think the success at this point in time is actually the employee engagement and I think when I look at the presentation earlier on I can see that our employee engagement level is high. That’s important, and then they actually went to have their own gathering to talk and laugh about it and this to me is success because to me, if you can train, you can have good methodology, good material but you can’t engage the employee, it’s no use.”

At the end, Jeremy was pleased with the outcome and immediately signalled to his staff that he wants to roll it out to other stores, involving “more of the staff, even backend.” In fact, he is thinking of going one better by getting his suppliers in, for they know the products better than any of the DIY Ezy staff - “how they can come into this programme together and use their expertise and professional knowledge to really train our people. So it will be like a tripartite kind of thing, three parties working together. I like that kind of working relationship.”
Case Study 2 – ACE Services

ACE Services is a facilities management company that handles among its vast clientele, housing estates in Singapore. It offers facility services such as cleaning, security and landscaping maintenance, and does so with several teams of property officers who work in different domains such as horticulture and pest management, in collaboration with residents and contractors.

As ACE Services is a fairly large organization, it took a while for the Boot Camp to get going. Identifying a suitable project sponsor and the team members took some time, and the diagnosis and scoping of performance gaps to build workplace learning efforts around was not easy, considering the high volume and wide range of work activities the company engages in.

Eventually, the Boot Camp project team settled on a particular estate council, which has a young, energetic and gung-ho Assistant General Manager who was game to try out new ways of learning for his team. Within that team, he identified four experienced Assistant Property Managers (APMs) who have training responsibilities for other staff like new hires or interns. Carol is one such APM who looks after the cleaning and conservancy services in the town council. She is vivacious, forthcoming and down-to-earth. Having been in ACE Services for 18 years, she is evidently competent in her job, but she has reached a point where she does not think too much about what lies ahead for her.

When told that she would be involved in the Boot Camp project, Carol was initially hesitant. She was not sure what the project entailed, and the fact that this was positioned as a pilot project did not alleviate her anxiety, as she felt that her town council was “under the spotlight”, and “very pressurized. If it fails, the whole ACE Services will know that we are one of the coaches.” Carol felt better when it was explained to her that the project entailed her conducting on-the-job training for an intern, something that she was already doing from time to time. The difference was that for the project, she and the other APMs would first undergo a workshop on how to design a job shadowing experience for the interns in a more intentional manner so that their workplace learning would be even more effective. Once this clarity was achieved, Carol relaxed visibly and her open disposition to learning began to surface.

During the workshop, Carol and her fellow APMs were participative and eager to learn, as she commented that it was about “improv(ing what was) existing and familiar” to them. They picked up little nuggets on how to structure a shadowing plan for their interns, which included tips on understanding their audience profile, briefing and debriefing, as well as guided reflection. Despite feeling before the project that she was reasonably competent in conducting on-the-job training, Carol still found new learning from the workshop, which she was excited about.
For the project, Carol was assigned an enthusiastic intern called Erica. Bearing in mind what she had learnt, Carol put in effort to plan the shadowing session, knowing that it could be re-used in future. She remarked, “I have something to fall back on you know, as a guide for me when we have to coach.” On the day itself, Carol started by finding out more about Erica and her learning needs, and adapted her shadowing plan accordingly. Carol commented, “It’s a bit of self-consciousness. So during the whole course (of training Erica) I’m very conscious actually but I’m glad that it went through quite successfully. Of course I cannot show them I’m very conscious myself, so we have to be very natural, if not they will doubt our capability.”

The half-day shadowing went exceedingly well. On their estate walkabout, Erica witnessed Carol handling various requests and complaints from difficult residents in a calm, helpful way. Carol even went the extra mile even though it was obvious sometimes that certain requests were not technically within her job scope. Carol’s expertise and personality touched Erica so much that she called Carol her “role model and a good mentor”, as she is able now to “take home something that I can apply when I am in my real working life in future.”

For Carol, something unexpected and interesting happened as a result of that half-day with Erica – “One thing for me is job satisfaction because I’ve been a trainer for so long and then after how I hear the interns rave about what they’ve learned and some of them expressed their intention to join us, it makes me feel good. So I will have more confidence in teaching next time. Then another thing when you boost your ego, your efficiency level up so it actually benefits the company also. So everything goes together.” In the course of this project, Carol found a renewed zeal for her job and for coaching others. She was pleased to know that Erica specifically asked ACE Services Human Resource personnel how she could join Carol’s team after she graduates.

**In Carol’s mind, this form of workplace learning if done well can help to retain talent in ACE Services,**

“because less turnover rate so everybody will operate smoothly, the whole team will be able to perform. If not, I have to come to work and think, “Who’s going to resign and who am I going to cover again?” because when it comes to covering, to be frank it’s always us APMs. We got to cover a lot of things.. I don’t like disruption, I just want to 顺顺 (smoothly) do my work. Seriously, this is what we look forward to. We’re going to work for the rest of our lives, I still got many years to go through but if I don’t feel like coming to work, feel so stressed up, I got to cover other people, clear their s**t, so like I say it benefits me also.”

Carol reckoned that this project benefited everyone, from the individual to team to the organisation. She was keen for it to continue after the project and be expanded so that new hires or interns can be exposed to longer, more sustained shadowing stints with trained and different supervisors in different domains.
Case Study 3 – Byrnes International

As an experienced consultant, Penny was looking forward to working with Byrnes International, a service apartment owner-operator. Byrnes seemed primed to adopt workplace learning, with its own established training arm providing classroom-based soft-skill and hospitality training as a base for staff to continue learning the ropes on-the-job. But there did not seem to be a compelling performance issue to tackle in the guest service department. Interviews and onsite-observations pointed at a generally positive learning culture, one where staff were entitled to at least 40 hours of training with strong peer learning networks even among staff from different properties.

However, even though learning necessarily happens on the job, how much and how well one learns depends on one’s supervisors. As one guest officer said, “I want to learn but my supervisor does it (what I don’t know how to do) for me. So I end up learning on the job much slower, even though I’m hungry to learn.” Leadership manifests itself in “telling” or taking over the task as supervisors find people management challenging at times. Although staff were familiar with the company’s standards and guidelines, they lacked confidence and poise to communicate them in the best way possible to the guests.

The Residence Manager, Sally, was clear on her desired project outcomes; it should develop staff’s critical thinking skills to cope with unexpected situations and reduce the need for constant “running” back to supervisors for solutions. When it was eventually decided that the workplace intervention would be a coaching programme for the guest supervisors delivered over six one-and-a-half hour sessions, Penny noted Sally’s disappointment at the seemingly narrow focus on asking good questions. She vowed to work doubly hard to win Sally over.

In implementation, Penny also faced various challenges. Sally declined to co-facilitate some sessions despite Penny’s assurances of support. Penny also had a highly varied profile of learners. For one of the supervisors, the programme content was “nothing new, I know this already”. When asked to elaborate on their understanding of coaching, Penny’s heart sank when one of the learners responded, “I see staff doing it wrong, I tell them what to do”. Although somewhat disheartened, Penny persevered with the sessions, adopting an iterative approach as the weeks went by and adapting the material on the fly to include other areas such as communication skills which the learners seemed to need.

Penny also noted the concerns that supervisors had about whether a coaching approach works with everyone and how they would be perceived by their staff. As one supervisor put it, “how to convince staff of the ‘new me’? My staff might find it strange or fake if I start to ask so many questions to lead them to the right answer”. Moreover, the supervisors felt that a coaching approach would not work well with everyone. Older staff might prefer a more instructive approach and the work for some departments like housekeeping was perceived to be routine with no need for such a “roundabout way of correcting mistakes”. Another major disappointment was the lack of support for Penny
to conduct on-site observations of the supervisor applying their coaching skills. She felt it was a missed opportunity to support the learners in real-time application at work. But Penny adapted and got learners to keep a log of the coaching incidents they had experienced to share in subsequent sessions.

By the end of the project, it was the small wins and unexpected turn-arounds that Penny appreciated the most. Sally herself noted the tangible behavioural changes among the supervisors; there was more confidence and composure in dealing with daily operational hiccups, with some deliberate attempts to build staff confidence in working out solutions independently. As one guest officer put it, “I feel more confident and respected, (unlike) in the past (my manager) would say ‘how come small things you didn’t see’… Now they use phrases such as “I know you are busy, but we also need to pay attention to the small things.”

While there was no dramatic transformation, the guest officers noted the difference in the tone and demeanour of their supervisors. Another guest officer also noted, “The supervisors control their anger better. They are more calm, they explain better, and I feel I can ask them anything I am not sure about.”

As Penny nudged the supervisors to practise their coaching skills and log these incidents to share with the group, she noted their struggles and personal learning. One of the supervisors shared that he was usually more instructive (just like how he had been taught when he first joined the organisation) when inducting new staff. However, asking more questions and being curious about how his staff perceived things made him a more patient and approachable person. More importantly, Penny realized the project’s impact on the supervisors went beyond the workplace. A supervisor shared that he places the “learner vs judger” card given to him on his home desk as a constant reminder to “take a step back before reacting”. The more they were willing to try, the less unnatural it felt and slowly but surely, Penny felt more optimistic that a positive shift in the workplace culture could happen to make coaching part of the organization DNA.

More surprisingly, Penny noted Sally’s turn-around. Sally had attempted to use coaching even on the housekeeping staff whom they had initially thought would be resistant to it! Instead of directly highlighting the inconsistent positioning of wine glasses in the guest room, Sally chose to turn it into a light-hearted moment by asking the housekeeper if she would feel anything amiss as a guest. Sally shared candidly on the personal impact that the project had on her, “it has given me an alternative communication style… where I might always be instructing in the past, (now) I ask questions like, ‘What do you see here? From the customer’s point of view, what do you think that means…’”. Initial reservations about “appearing fake” were also resolved; as Sally noted, “it is up to the individual whether (coaching) becomes a habit, but it is good to know of such alternatives as it makes us mindful of differences in leadership style as well as attitudes we take on when we teach”.

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Case Study 4 and 5 – Indosiam and Rosa Blu

‘This is unfair!’ Justin thought. Being in the Food and Beverage (F&B) industry for more than 20 years, he simply could not understand why the management of his company, Stella F&B Group, had picked his Indosiam outlet in Woodlands for this workplace learning project. He knew that recently the head office had been receiving many customer complaints about his outlet, especially since he re-joined the company a few months ago after a brief stint outside. He felt it was unfair because having higher customer complaints was unavoidable when his outlet handled a much higher number of customers compared to other Indosiam outlets. Moreover, the Woodlands outlet’s clientele was mostly families who were generally more demanding, unlike business-type customers in other outlets who were usually more gentle and generous. He worked very hard to increase the sales of this outlet, competing with many restaurants in a busy shopping mall, so that he could get recognition for the good performance and promotion to a higher position. He was so uncomfortable with this project that he requested for a transfer to another outlet, which was not accepted. Instead the Human Resources (HR) Manager promised to reconsider his request and even dangled a monetary reward if he cooperated and achieved the goal of ‘zero complaint reported to the head office’ at the end of the project.

At about the same time, over at Rosa Blu, a different F&B outlet belonging to another company altogether, Richard the outlet manager was very excited about participating in the upcoming project as he felt he would be able to learn something new and make his staff work more effectively. Rosa Blu is run by the F&B group Amour and is the only F&B outlet within the lush greenery of National Park, which is a popular tourist attraction. Free from competition, Rosa Blu enjoys a steady stream of customers, mostly tourists, all day on weekdays and gets over-crowded on weekends. The training department in Amour was established about a year ago, but there had been no standard operating procedures (SOPs) or structured training programmes for the staff at Rosa Blu. That was why Richard liked this project as he thought, “it will make them feel excited, especially those who look forward to growing with the company”. He hoped for the staff members’ “mindset change by instilling culture of taking initiatives” through this project.

Across both outlets, there were similarities. Both Justin and Richard were struggling with a constant shortage of manpower and high staff turnover just like any other F&B establishment in Singapore. Their outlets’ all-day operation seven days a week made it worse as they needed more staff members, yet it was very hard to arrange any formal training. Due to inadequate training, very often the staff could not handle difficult tasks such as dealing with customer complaints themselves and had to rely on the outlet-in-charge (the most senior person) for the day. Another issue was lack of consistency in service standards. Since supervisors were not trained on SOPs, new hires were trained using different procedures based on each supervisor’s individual experience and knowledge. Also, a high number of foreign workers with diverse backgrounds would mean language and cultural barriers in rolling out SOPs.
Implementation started at Indosiam. Justin’s superior, Peter, who had just joined the company as Operations Manager, championed the project, working closely with the HR Manager and Operations Director as well as the IAL WLS. They designed and implemented interventions such as job shadowing, demonstration, and role-play based Community of Practice (CoP) sessions. Job aids were also distributed to staff to reinforce their learning.

Peter, overseeing a few outlets, came to Justin’s outlet almost every day during the project period and spearheaded all the activities while giving guidance to Justin and his senior staff members so they could build their competency in facilitating those activities. In the past when Justin worked for a hotel, he attended many types of training, but he never came across these kinds of learning activities at work. In particular, during short CoP sessions, he realised that different staff members had different ideas and everyone including himself could learn from each other.

At Indosiam, Justin slowly started to believe in this concept of ‘workplace learning’. He could see that the staff, even part-timers, had “more confidence to go near the guest” and perform their tasks according to SOPs. He was happy to see the increased staff competency as it meant he could run the same operation with fewer people. Despite the increased customer volume during the festive season, the staff wanted to continue the learning activities as they felt that those activities had made their job easier and did not really take a lot of their time. Most of all, everyone started to enjoy and look forward to the sessions.

In Rosa Blu, interventions such as the SOP training, daily briefing, and coaching skills training were implemented. With the SOP and coaching skills training, “a lot of follow-ups had to be done” to apply the classroom learning to daily work, which he felt were what could be done only if they had free time. Running F&B operation is “firefighting” every moment due to the lack of manpower and unexpected situations happening all the time. In addition to conducting a coaching skills training session, the IAL WLS provided various tools and job aids for Richard to try out to enhance workplace learning. He strongly believed that coaching is important and all those tools are useful, but he was frustrated as he really did not have the time to sit down and apply them.

A few months after Richard started his daily briefings, which was a communication and information sharing channel among the staff members, he realized that his assistant managers were skipping the briefing sessions whenever he was not around. Also, he tried very hard to engage and empower them so they could take the initiative to lead the sessions. He would “give the cue” to them in the morning by asking “if they had anything” to share for the briefing later, but during the briefings “the assistant managers usually did not initiate” any discussion. Instead, “they just waited” for Richard to talk. With the festive season happening in the middle of the project, he really struggled to meet the high demand on operations while leading the project implementation.
Over at Indosiam, about half a year later when the project was almost ending, Justin came back from the longest leave period he had been on since re-joining the company. It was the first peaceful holiday for him as none of the outlet staff contacted him with any issues. The project was successful in achieving the goals as he saw fewer customer complaints at the outlet and there were no service-related complaints received by the head office. His outlet even became the outlet with the most compliments that month. He was proud to be recognized and appointed as the next champion to support his superior in rolling out the project to other brands and outlets. He felt very confident in championing the next phase of the project on a larger scale and said to himself, “now I can feel it can be done”.

Reflecting on the project that just ended, Justin felt the project was too top-down and going forward he would like to integrate a bottom-up approach by engaging the staff more actively from the design phase. He learnt that they had many ideas, which could contribute to richer learning experiences for all. He also hoped that HR would introduce more reward and recognition schemes to encourage them to participate in workplace learning.

Back at Rosa Blu, Richard thought, “This isn’t working!” Throughout the project Richard was supposed to co-lead with Jin, the Assistant Training Manager. On a personal level, they were not close and he rarely saw her after the initial planning stage. While going through this project process he started to feel more and more unhappy with the way Jin talked about what the operations should do. For instance, she claimed he should conduct more frequent formal performance appraisals with his staff. She also instructed that each outlet’s operation team was in charge of developing SOP manuals, based on the templates she provided, and training the staff according to the manuals. She did not seem to understand the operational challenges and reality that outlets face. In fact, Richard felt it should be Jin’s job to provide such support to the operations team.

Although to some degree Richard and his staff learnt some new things during the project, he felt that the interventions were not very practical or effective as this project demanded “overwhelming commitment” from him and his staff. Moreover, he was disappointed that he had failed to instill the mindset change in his staff about learning. He was not confident that he could roll out similar projects himself as he “does not have the expertise” and was also not sure if the interventions could be adopted elsewhere.
When we consider assessment for the changing nature of work, we first need to clarify what we mean by the changing nature of work, and then what we mean by assessment. In the workshop – to be run as an adaptation of the ecology room - we will explore not only these two important ideas but also what it means for what we understand learning to be.

As an introduction to the changing nature of work, Birenbau, (1996) offers a useful entrée as he briefly sums up the nature of change and of the competencies he considers are important in relation to these changes. Some twenty years ago he was naming aspects of the future learner in the light of change.

What characterizes the era following the technological revolution ... is pluralism and continual dynamic changes. As information is no longer considered finite and static but rather infinite and dynamic, the well-functioning person is likely to have to acquire new knowledge independently and use it to solve new unforeseen problems. Hence successful functioning in this era demands an adaptable, thinking, autonomous person, who is a self-regulated learner, capable of communicating and cooperating with others. The specific competences required of such a person include

a) cognitive competences such as problem solving, critical thinking, formulating questions, searching for relevant information, making informed judgments, efficient use of information, conducting observations, investigations, inventing and creating new things, analyzing data, presenting data communicatively, oral and written expression;

b) meta-cognitive competencies such as self-reflection, or self-evaluation;

c) social competencies such as leading discussion and conversations, persuading, cooperating, working in groups etc., and d) affective dispositions... for instance, perseverance, internal motivation, initiative, responsibility, self-efficacy, independence, flexibility or coping with frustrating situations. The need to develop these competencies expands the scope of education and this creates a challenging enterprise for educators. (Birenbau, 1996, p.4)
It takes little to realize that this long shopping list of competencies does not apply to every job or every type of work, or even to some occupations. However, what Birenbau’s list does highlight is that technical competencies are not in the foreground, rather we can assume that the types of competences listed here are embedded in technical competencies. To state the obvious, technical competencies are also constantly changing and it is this as much as other factors that highlights the need for what is variously referred to as self-regulated learning, independent learning, meta-cognitive and reflexive abilities – all somewhat different things but broadly signifying a shift in responsibility for learning from teacher to learner. Many authors highlight in one way or another the need for an integrated holistic approach to teaching and learning (see for example, Barrie, 2007; Reid, Abrandt Dahlgren, Petocz & Dahlgren, 2011; Higgs, Barnett, Billett, Hutchings & Trede, 2012; Bound, Sadik & Karmel, 2015). A more holistic view of learning focuses on the ‘whole-person’ learning where learning is regarded as an ongoing process of participation in relevant activities, and engagement in meaningful undertakings rather than learning as a ‘thing’, ‘product’, or acquisition of certain products. However, Barrie suggests that teachers vary in their understanding of generic skills and qualities (and of what a holistic view of learning means) depending on the nature of the learning outcomes, ranging from “atomistic, low-level technical and personal skills, to holistic interwoven abilities and aptitudes for learning” (Barrie, 2007, p.440). Such understandings clearly mediate assessment design.

This all suggests that thinking of assessment as ‘testing’ using activities such as essays, MCQs and so on, out of context of the application of learning; and of learning as learners passively acquiring knowledge and skills, needs revisiting.

In our study of assessment for the changing nature of work, we identified a number of elements important in assessment design for the changing nature of work. The research project investigated six different sites of learning and assessment, as listed below, collecting a rich variety of data. We interviewed the learners, the course designers, facilitators and assessors and where appropriate the employers. We also undertook observations of learning and assessment activities and collected and analysed the course documentation.

**Table 1. Summary of cases**

<table>
<thead>
<tr>
<th>Case</th>
<th>Certified</th>
<th>Duration</th>
<th>Assessment activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace learning facilitators</td>
<td>Yes</td>
<td>10 Months</td>
<td>Formative assessment from coaches, summative assessment through learning journal, enterprise report, and final assessment interview, 70% attendance required</td>
</tr>
</tbody>
</table>
| New promotional menu items | Yes | 4 Weeks | Live cooking demonstration  
|                           | No  |          | Written feedback from chef  
|                           |     |          | Showing cooking team how to cook new menu items  
|                           |     |          | Observation by outlet supervisors after launch of new menu items  
| Rota commander            | Yes | 7 Months | Simulated exercises  
|                           |     |          | Written theory tests  
|                           |     |          | Presentations  
| Resident doctor           | Yes | 3 Years | 360 feedback  
|                           |     |          | Monthly evaluations  
|                           |     |          | Mini CEX  
| Aircraft engineers        | Yes | 3 Years | Final year project  
|                           |     |          | In a first year module – making and testing an electric circuit  
| IT Network Engineers      | Yes | 1 Week  | Observation of basic skills by facilitator  
|                           |     |          | Formative assessment of problem solving exercises  
|                           |     |          | Written test involving identification of a range of network problems  

Although we selected each case on the basis that it offered innovative possibilities for assessment for the changing nature of work we found (not unexpectedly) that the function of assessment across different sectors and professions is primarily assessment of learning i.e. summative assessment carried out at the end of a course to ascertain or ‘measure’ and certify learners’ achievement of learning. It functions as a formal statement of the learners’ accomplishment of learning, and only informally as part of teaching. Here, summative assessment serves an important social function in endorsing professionals like fire-fighters, medical doctors and engineers who provide crucial public services. Summative assessment is also integral to the management system of various institutions: it has a ‘dual function’ that enables some of these institutions and organizations to rank, assign and/or reward employees/learners. This is reflected in the ‘place’ of learning which is closely situated with and/or within the Human Resource
department. The dual function of assessment – assessment of leaning and assessment for learning (formative assessment) leads to assessment dilemmas; the interaction between the different purposes of assessment (for and of learning) can result in mixed or confusing messages for learners.

However the good news is that we found there is a multiplicity of opportunities for assessment for and as learning. The assessment horizon could be expanded with for example, sustainable assessment (Boud, 2000; Boud & Soler, 2016). Sustainable assessment prepares learners to make judgements about their work, for unforeseen, unpredictable circumstances beyond the course.

A major set of findings from our study are represented diagrammatically in Figure 1. In the workshop we will explore:

a) Each of the elements – what they mean
b) The relationships between them
c) The application of these ideas to a module or course that participants are involved in (as a curriculum or course materials designer, or facilitator, or assessor)

**Figure 1.** Designing assessment

![Diagram of Designing Assessment](image)

This workshop will provide a taster of the possibilities for implementing workplace-based learning and assessment.
REFERENCES


OBJECTIVES AND PURPOSE

The concept of an integrated curriculum and training delivery strategy for soft and literacy skills in the Continuing Education and Training (CET) landscape in Singapore has been a relatively unexplored one, although such a training mode has been gaining rapid popularity for workplace-based learning and education in other parts of the world such as the United States of America, Canada, Australia and New Zealand. One probable reason for this could be the unique economic situation faced by some of these countries. For example, the Integrated Basic Education and Skills Training (I-BEST) model in the Washington State in the USA, was conceived when the State was “emerging from the ‘tech bust’ of 2001” and faced shortage of adult workers with “at least some post-secondary education and training” (Wachen et al., 2010) and required a programme that could accelerate the ability of these workers to obtain post-secondary credentials. Singapore, on the other hand, adopted a different approach to training and re-skilling her adult workers in soft and literacy skills. Many mature adult workers who had left school without completing their GCE ‘O’ Levels in the early years following Singapore’s independence needed credentials of their literacy proficiency and employability skills attained for employment and access to further skills training. This led to the development of a more modular training and credentialing approach for workplace literacy and employable skills.

One of the more common definitions of “integration”, cited by several researchers, takes reference from Courtenay and Mawer (1995), in which “integrated literacy” refers to the “[concurrent development of] language, literacy and numeracy and vocational competence as interrelated elements of the one process”. This differs significantly from the existing Workforce Skills Qualifications framework where literacy skills, soft skills and vocational skills are typically delivered as independent modules. The Workplace Literacy and Numeracy (WPLN) Programme in Singapore, for instance, equips learners with the necessary speaking, listening, reading, writing and numeracy skills for the general workplace environment, while the required vocational skills may be taught separately.

Much of the workplace-learning literature available has commented on the benefits of a training curriculum that integrates the foundational skills of literacy and numeracy. One of its advocates is The Tertiary Education Commission in New Zealand which cited research confirming that “improving workforce literacy, language and numeracy skills works best [in a context] relevant to the learner”. The integration of a “significant
increase in the amount of explicit literacy and numeracy teaching and assessment” into vocational training has also been proposed. (New Zealand. Tertiary Education Commission, 2009). In Canada, there has been growing support for the “integration of literacy and essential skills with pre-apprenticeship programmes, vocational training and trades training”, as this approach was deemed to enable students and apprentices to be “successful in their trade or vocation” (Folinsbee, 2011). It is also of interest to note research indicating that generic literacy training, or “literacy education dealing with general language functions decontextualized from its social purpose, has had a low level of transferability” (Australia. Department of Education, Science and Training, 2005). A 2016 study trip to Australia and New Zealand by a group of Singaporean Adult Educators also yielded positive observations about the efficacy of such integrated and workplace-based training.

Against the backdrop of such research findings, the Institute for Adult Learning (IAL) in Singapore embarked on a pilot of an integrated mode of curriculum development and programme delivery for the low-wage and low-skilled workforce segment of the local population, in order to enhance skills collaboration and learning for added training effectiveness (ESCALATE). Its intended outcomes include determining the effectiveness of an integrated curriculum and training model on employment and productivity outcomes; and the implications of this method of learning for different types of learners and workers. The study aimed to cover organisational case sites across five different sectors, one of which was the hotel industry.

In hospitality-type industries, effective communication skills are widely acknowledged to be essential for service excellence, as well as to enhance guest experience and satisfaction, which could translate to better organisational efficiency, productivity and profitability. The purpose of the ESCALATE project for the Hotel case site was to create and define the Hotel’s desired service experiences through concurrent delivery of specific and targeted training skills, especially literacy skills, required by this group of employees at the entry-level. It also aimed to upskill the employees more quickly for career progression. For such employees, Folinsbee (2011) claims, such a training approach would be “deemed to contextualise the basic skills so learning has meaning and ensures success in the vocational programme”.

**BACKGROUND TO THE HOTEL CASE STUDY**

The ESCALATE project for the Hotel case site advocates adoption of a fully integrated training solution where vocational content and required essential skills (i.e. literacy and soft skills) are fully integrated in the development and training. The Hotel’s vocational skills refer to the functional skills that are required by the service staff (i.e. target learners) to perform their roles competently, while soft skills refer to the skills that are
used when interacting with the Hotel’s guests or patrons. Though literacy skills include listening, speaking, reading and writing, the ESCALATE project focuses only on the listening and speaking modalities since these modalities are used predominantly by the learners at the workplace. Hence, the adoption of an integrated training solution means learners acquire vocational and soft skills while at the same time overcome unnecessary literacy barriers to learning; expand their repertoire of required workplace vocabulary or phrases; and increase their confidence in using English at the workplace.

The four phases of the project included the training needs analysis (TNA); design and development of the integrated training solution; implementation of training; as well as an evaluation and review of the integrated training programme. The TNA phase was done first to determine the training needs of the Hotel in upskilling the learners. The findings also include non-training interventions that the Hotel should consider in order to build a culture of service excellence. The training needs that are determined from the TNA phase was organised into 10 modules. Each module was developed, implemented and evaluated before progressing to the next module. This approach enabled the modules to be implemented progressively instead of implementing the training program only after completion of the design and development of the 10 modules. This progressive approach also enabled the project team to identify areas of improvement from earlier modules to be incorporated in the design, development and implementation of subsequent modules.

**METHODOLOGIES**

Various methodologies were utilised for each phase of the project. During the TNA phase, interviews and focus group discussions were used to collect qualitative data. In addition, the data was triangulated with information from the Hotel’s quality assurance audit report.

For the design and development phase, two subject matter experts (where one specialises in vocational and soft skills while the other specialises in literacy skills) worked collaboratively to design and develop each module. The partnership is essential in ensuring that vocational, soft and literacy skills are addressed and integrated seamlessly in the training programme. Hence, for each module, the vocational and soft skills subject matter expert (SME) designed and developed the module, before forwarding it to the literacy SME to integrate the literacy components, such as providing appropriate scaffolding for the acquisition of language used for a specific context.

Training implementation adopted a single-facilitator approach, meaning the facilitator delivers both the essential and vocational content. To equip the facilitator adequately, the two SMEs conduct train-the-trainer sessions prior to the commencement of the modules to highlight features and learning outcomes of each module. To cater to the learners’ shift hours, each module is conducted three times within the week for different groups of learners. Each module is completed in four hours, including one hour of content-sharing
and the next three hours allowing learners to apply the appropriate skills at the workplace, while the facilitator observed and provided individualised feedback to the learners.

The final phase is the evaluation and review of the integrated training program. At the commencement of each module, one of the developers observed the lesson to identify areas of improvement, while learners evaluated and provided feedback about the programme. In addition, the facilitator’s observations of each learner’s achievement of each module’s learning outcomes are documented. Furthermore, supervisors’ feedback about learners’ performance at the workplace was also collated. Finally, the Hotel monitored the investment in training, i.e., whether the ESCALATE project would enable the Hotel to improve her quality assurance ranking against other similar hotels in Singapore.

**DATA SOURCES**

During the data-gathering process for the TNA phase, qualitative data was collected from the line managers (via interviews) and the learners (via focus groups). The line managers included the Hotel’s Outlet Manager, Assistant Front Office Manager and Lifestyle Concierge Manager, while the learners included members from the Front Office, Lifestyle Concierge, and Food & Beverage departments. Data was collected from these sources to identify the learning needs at the Business, Performance, Learning and Learner levels, a BPLL model by Tobey (2005). At the business level, data was used to understand the strategic and business focus of the organisation, while at the performance level, it was used to identify the gaps between the current and desired performance of the learners. In addition, at the learning level, data was used to identify the gaps in the learning conditions, while at the learner level, it was used to assess the gaps in knowledge and skills between the current and desired conditions.

Data collected from the interviews and focus groups was then triangulated with information from the Hotel’s quality assurance audit report. The audit is conducted twice yearly by an external party, where the auditor stays in the Hotel for a few days to thoroughly assess every aspect of the hotel experience, from room reservation to checkout. The Hotel is evaluated against a set of benchmarking standards across several departments. An audit report is generated that includes quantitative data, which is a list of scores for all the standards, and qualitative data, which is a narrative summary explaining the scores. The audit report also includes a score for each department and an overall score for the Hotel. The overall score for the Hotel is ranked against other similar hotels in Singapore.

Besides gathering data at the TNA phase, data was also collected at the evaluation and review phase. Kirkpatrick’s (1998) four levels of evaluation was used for evaluating the programme. The data sources include evaluation forms.
(Level 1) facilitator’s observations of each learner’s achievement of each module’s learning outcomes.

(Level 2) supervisors’ feedback about learners’ performance at the workplace

(Level 3) and the Hotel’s quality assurance ranking against other similar hotels in Singapore

(Level 4) Kirkpatrick’s four levels of evaluation was used since it could be tied back to Tobey’s BPLL model that was used during the TNA phase, thereby closing the entire cycle of programme design and development.

INTEGRATING LITERACY SKILLS INTO THE VOCATIONAL AND SOFT SKILLS

The adoption of an integrated training solution includes explaining phrases or expressions that are used to describe vocational or soft skills. For example, instead of assuming all the learners understand the meaning of “take initiative”, this phrase is explicitly defined as “doing something first instead of waiting for others to tell you to do it”. This definition is stated in the Facilitator’s Guide to ensure delivery consistency since each module is conducted three times within the week for different groups of learners. The act of defining the phrases or expressions used in the lessons is intentional so as to ensure learners acquire the core content while, at the same time, minimise unnecessary literacy barriers to learning.

In addition, instead of using words to describe a situation and asking learners about the appropriate actions to take, the situation is presented to learners using a video that is created using an animated video software. That is, “showing” instead of “telling” the learners about the situation. In the real world, learners interpret the environmental situation using visual and auditory pathways, instead of reading a description of the situation. Furthermore, whether learners are able to read and accurately comprehend a description of the situation is dependent on the learners’ literacy proficiency. Therefore, “showing” instead of “telling” the learners about the situation removes potential literacy barriers to learning. Based on the situation that was presented in the animated video, learners discuss the appropriate actions that should be taken to assist the guests/patrons, while the facilitator supported the learning process.

Moreover, instead of providing a list of isolated “phrases” for learners to acquire, these expressions are set against a context relevant to the learners’ workplace. Expressions that are used to initiate a conversation are intentionally differentiated from expressions that are used to respond to a statement/question. For example, expressions to offer help to guests include “How may I help you?”; “May I help you?”; and “Please allow me to help you.”, while expressions to respond to “thank you” include “You’re welcome.” and “It’s my pleasure to serve you.”. Therefore, learners are taught explicitly and systematically the language used to demonstrate vocational and soft skills.
IMPLICATIONS AND SIGNIFICANCE OF THE CASE STUDY

The above case study of the integrated training programme piloted with the Hotel offers promising insights into the effectiveness of such a programme design and training approach. In particular, it would inform the development and implementation of an integrated mode of training not only for the Hotel sector, but the Hospitality and Services industry in general. Besides contributing to the wealth of data and research already conducted internationally on the integrated skills training model, the findings of this case study will be especially relevant for the Asian context, especially as a sizeable proportion of employees in the Hospitality and Services industry here hail from neighbouring countries such as Malaysia, Indonesia, the Philippines, Thailand and China. In fact, this case study, if effective and efficient in meeting training objectives within a shorter duration, could be a springboard for hotels, retail stores and Food & Beverage outlets to pilot and in the longer term, implement such an integrated training programme for both their local and non-local employees.

To prepare for the changing paradigm in workplace-learning, it is of utmost criticality that existing Adult Educators working in vocational, soft skills and literacy sectors (comprising curriculum developers and trainers) are adequately equipped with the pedagogical expertise to design and/or conduct integrated curriculum and training. Findings from this case study would to inform the training framework for such Adult Educator capability development courses relevant to the Singaporean context.

The skills integration training pilot was also extended to other sectors such as retail, F&B, logistics, healthcare, landscaping, cleaning and security, among others. The greater wealth of data yielded from all the case studies will contribute to a better understanding of the strengths and challenges of implementing the integrated model on a larger scale, as well as the usefulness of the various integrated models for different industries.

REFERENCES


Sypnosium Track 2 - Technology-Enabled Learning
Good morning. I have actually been here before, about four years ago. I spoke in Nanyang Technological University and, of course, that was great fun. So, it’s lovely to be back again and I would like to thank the organisers for inviting me back here.

But anyway, what I want to do today is to take you through rather an interesting journey looking at theory and practice, and in fact, looking at some of the emerging theories that are coming to pass because of new forms of pedagogy that are appearing because of new technologies. And what I want to talk about in particular is where they meet, what we call the digital praxis, you know, where practice and theory actually combine. And I’m going to take you through a lot of different ideas and I’m going to try and make sense of it all for you at the end.

Here’s the first slide – there we are – and you probably note the image. Some of you may recognise it. I’m going to come back and revisit that later on. You can figure out and probably discuss amongst yourselves what it is and what it might mean. But so, anyway, here’s what we’re dealing with. We’re dealing with a whole new generation of people coming into your workplace, coming into your organisation, and here’s a scary thing for you to think about: the young people now entering into your organisation from school, they have no knowledge or memory of the last century, which by the way was the one that you were born and educated in. Isn’t that interesting? So, they’re coming in with a whole new set of ideas and expectations and they are immersed in technology.

You can see here there’s a claim that the average digital birth of a child is six months. I refute that actually, because I keep getting these images coming through on Facebook and these ultrasound images. So children are appearing on the Web even before they’re born. I read some research yesterday off the BBC website and it said that generally, on average, a child, by the time they reach five years old, they have 1,500 images of them taken and posted on to Facebook and various other websites by their parents. Now, you can think of the ethics of that to begin with. But, it means that essentially, they have a web presence even before they learn to talk and walk.

And it’s interesting because I think yesterday – it’s a wonderful image, this, isn’t it – yesterday, Piyush Gupta actually mentioned the phrase ‘digital natives’. Well, I’d like to
take that to task actually. The digital natives phrase comes from the work of Marc Prensky, who’s an American colleague of mine actually. I know him quite well. And Marc talks about digital natives and digital immigrants. The natives are those who were born within the age of technology and they adapt to it very quickly and they can, you know, text without even looking, and all that kind of stuff. They use smart phones, lots of them. Yeah.

Whereas, the digital immigrants, people like me who were born before this age, we struggle with the technology. We can speak the language, but we speak it with a bit of an accent, you know what I mean? Yeah, struggling, trying to tap the words out on the phone. Now, that's all well and good, but that also has a lot of problems to it. So, next time you hear digital natives and immigrants spoken about, think of the issues that come with that.

The problem is that you’re compartmentalising people by their age groups when they were born, rather than how they use the technology and that has a whole load, a whole set of problems with it. So, for instance, I’ve heard teachers abdicating responsibilities saying, ‘Oh, well, they’re all digital natives, my children. So, I’m going to leave them to it and stand back out of the way.’ Meaning that is, ‘I’m scared of the technology.’

So, there’s all sorts of issues with that. Actually, I’ll just go back to the image because that could be my dad. He’s 88 years old now. He was 88 in June and he – I introduced him to Facebook about four years ago. Can you imagine, 84-year-old man working with Facebook for the first time. And I told him about it and he said, ‘Well, why would I want to get involved with Facebook?’ He said, you know, ‘What’s it for?’ So, I told him that he could share images and talk to people around the world, you know, his family and friends. He’s got friends and family living in New Zealand, in Australia, never seen them for years. So he says, ‘I’ll have a go with that.’ And he got onto it and the first thing he noticed was you can friend people. And he saw my daughter. She was 23 at the time, and so, he “friended” her. Can you imagine her face when she saw granddad “friending” her on Facebook?

I won’t tell you what she said next, but the interesting thing was a little bit later he had some sad news to break. One of his sisters, his elderly sister had died. This is a fact. This actually happened. So, he said, ‘I’m sorry to inform you that Auntie Edna passed away in her sleep peacefully last night. LOL.’ Face-palm moment. So, she came back to him and said, ‘Granddad, you can’t say that. It’s dreadful. Auntie Edna has died and you’re laughing out loud.’ He said, ‘No, no, no. It means lots of love.’

Here’s the deal for you. If you’re in an organisation and you’re using digital technologies and there are several generations sharing the same space, you’re going to get language differentials. You’re going to get problems with the communication. And this is one of the issues of the digital age, but there are many others and we’ll come to those in a moment.

But my father, he started blogging and now he’s been blogging for several years and this is one of his images here of an aircraft that he was in in the Royal Air Force.
this is an image of him just during the war when he was a boy and he blogs about the war years. He blogs about his time in the Royal Air Force. This is him now and last year at a wedding, and he blogs every morning religiously without fail and people come in and read it. And the other day, he phoned me and said, ‘Steve, come over quick, quick. Something happened on Facebook.’ He said, ‘My status update.’ I said, ‘What’s happened now? What have you done?’ and I ran over and I had a look at it. And underneath it, it said ‘57k’. I said ‘57 – that’s 57,000 likes, dad. When did you post this?’ ‘This morning.’

I was livid. I was annoyed. I can’t even get 100, I don’t know about you. But there he was, blogging away and getting all these visits and hits. The guy just leveraged the power of the technology. He’s a classic example of someone who does not fall into that common mould of the natives and immigrants, and there are dozens of other people like him out there who are doing the same thing. They become adept at these technologies.

You see, the thing is, ‘In the acts of writing, we are written,’ says Daniel Chandler. This is what we do when we blog, when we write. Our abstract thoughts become more concrete. They crystallise and we begin to understand more about what we’re saying. The other thing about technology is it has this provisionality to it. In other words, you can make something, create something, then edit it and polish it before you post it, before you publish it. And the whole idea behind this is it’s a very creative space if you know how to use it, and he’s leveraged the power of that.

And here’s an interesting piece of data here. It comes from work that was done last year. Reuters got together a whole load of sources of information and what they’re showing here is the trend online for younger people is huge and so is social media and it does go down the trend. So, we do have a differential in terms of the different age groups and how they’re using these technologies. Notice that print is very, very low. I’m not going to say that print is going to die because I think that the difference between reading a book and reading a Kindle is not that much different when you look at the content. It’s different in terms of the tactile experience, it’s different in terms of all of the other experiences that we have, but generally speaking, it’s the same concept: you’re reading text and instead of turning a page, you’re rolling the script. But there are issues and difficulties with that.

I want to give you another theory which I think is important for you to understand here and that is the digital residents and visitors theory that David White and Alison Le Cornu came up with over at Oxford University, actually, and they talk about the idea that as you use technologies, you start as a visitor and you become a resident in that area as you get used to it, as you acquire competency and then mastery. And the person next to you may be a visitor in that area and a resident in another area. So, it’s about context and how you use the technology, not about how old you are. And I think that’s good news for all of us, especially me, kicking on 60 here.
But this is an interesting little idea here because when you look at teachers and instructors and their fears, this is the three biggest ones that they voice: ‘How do I make this work? You know, you do know more about it than I do. How do I avoid looking like an idiot?’ Now, compare this to younger people’s fears, the three biggest fears of my students. Here’s mine. This is my students. I know – classy, isn’t it? But, you know, I asked two of my students about this and they are teaching colleagues, they’re teaching students, they were second year students, so I got them all to the stage with me and I said, ‘Which is it, girls? Is it this or this?’ And they said, ‘You know, Steve, when we’re in your lecture, it’s this. But when we’re with our own students in front of us, it’s that.’ So, they have both of those fears. It depends on the context again. So, there’s an interesting kind of theoretical construct there going on about the differential between what you do and what you don’t do, and what you’re used to and what you’re not used to. So, there you are.

Anyway, here’s another one. You show your 18-year-old son this. Who remembers these? Yeah, most of you. Who’s still using them? Can you imagine if you show this to a young person? They’ll probably say something like, ‘Wow, gee! You just – cool. You’ve just 3D printed the save icon.’

The problem is, you see, there’s this narrower frame of reference. Do you get Sherlock here at all? Do you get Sherlock? Yeah? Better than Cumberbatch and Martin Freeman, Sherlock Holmes, classic kind of Sherlock Holmes stories. I sat on a train recently and I heard these two school-aged boys who were sitting opposite me. They were talking and one of them said to the other, he said, ‘You know, I love the new Sherlock. You know, the one with Benedict Cumberbatch and Martin Freeman playing Sherlock, you know, and Watson.’ The other one said – he kind of touched his chin and said, ‘Yes. It’s wonderful’, he said, ‘But I prefer the classic version. The one with Robert Downey Jr.’ And I thought, ‘Nailed it.’ This is what happens, you see. Younger people have a narrower frame of reference. They’re coming into your organisation and they have a narrower experience. They may have read more widely but normally they have a narrower experience. But they have certain expectations, which I’m going to come to in a moment.

Now, this is a throwaway quote by David Warlick. I’m not sure how accurate this is but generally speaking a lot of the stuff that we’re thinking about in the future hasn’t yet happened and we don’t really know what’s coming. Some of them we do know but it’s very, very difficult to predict the future. If you want to know how to predict the future, go downstairs to the casino and see how people are so bad at predicting the future. But what we do know is that there are certain trends appearing, so there are certain technologies on their way.

This is Villemard from the year 1910, trying to predict the future of learning, and what he’s done here I think is interesting. He’s got people in rows, which is what education still in some cases, is. But see what he’s done here: although they’re learning in a passive way, what they’re doing is they’re networked. You see, if you can send information, data down one way, it can go both ways. So, in effect, that could be a networked classroom of
a type. And this was done in 1910. So, not so far off. But Voltaire nailed it when he said, 'Look, we're all a product of our present. We find it very difficult to look at the future.' So, when you're talking about the future of work and the future of learning, we've got some problems because it's very difficult to predict it.

Here's what Alexander Graham Bell said – his new telephone: ‘One day, every town in America will have one of these.’ He was right. You go to America. Every town has a telephone, don’t they? What he couldn’t predict though was that every one of us would have one in our pockets. He couldn’t predict the economies of scale, you know, satellite communications. He couldn’t predict mobile technologies and miniaturisation and transistorisation and so on. So, really, you’ve got kind of a problem here. The first phones were huge. They were massive. But when you walk around shopping malls now and hotels and airports, you see this. You see this kind of thing where you can put your phone in and charge it up and, you know, just walk away and come back, take the key, open it up, and your phone is charged up. This is something that we could not have predicted several years ago, and there are other things.

Somebody mentioned yesterday about joining up the dots. One of the things that’s happening I know in universities now and also probably in some workplaces is that we’re creating open spaces where people can be creative and where they can share ideas and collaborate together, and where they can learn through mistakes and failure – tinkering, if you like. I said to my students the other day, ‘Do you know what the word ‘fail’ stands for?’ And they said, ‘No.’ I said, ‘It’s first attempts in learning’. You like that? Fail does not mean that anymore. It means now that in this situation we can attempt to learn and find new ways to fail and new ways to learn through that failure. I know it’s difficult; as Ewart said earlier on that if you are a nurse or a doctor, you don’t really want to fail. But in lots of other areas we can actually make mistakes and learn from those mistakes. And the way you join up the dots is multiple, but creativity is the ultimate, I think. So, joining up the dots in that way, I think it actually changes your workplace.

It’s all about thinking outside the box, thinking in new ways. I’m a psychologist and I’m very interested in the way people think, the way people conceptualise problems. And learning through problem-solving and through challenge-based learning is a very powerful method especially if it’s well-structured and there’s lots of room and latitude to move.

And here’s another idea which I’ve been working on recently and that is that students will use the formal institutional systems when they have to, but they will use things like Facebook when they want to. So, there’s an element of personalisation coming into the workplace as well and into the university. I mean, it’s all about the mind. Winston Churchill said this, 'The empires of the mind are the new battlefields,' and we have to win their hearts and minds. So, learning in the digital age is going to be rather interesting, I think.

So, here’s an idea that came from the work of J.J. Gibson. Perceptual psychologists, he
talked affordances and constraints. He talked about the fact that every object that’s been
designed has built into it a perceptual message for you about how you use it. So, that
door handle there would be a left-hand affordance and it’s a twist and pull affordance.
It’s built into the design of it. And the problem is when we design rooms, we design them
with built-in affordances. So, this room here is actually very good because we all sat
around tables and people can get up and move around. But in universities, it’s not the
same. And in training rooms, in organisations, often it’s not the same either. Everything
is very regimented and ordered, very difficult to collaborate and communicate across
these gaps. If your mobile phone, your smartphone actually runs out of juice, where
do you plug it in? Do you look under the chair for a power outlet? Where’s the nearest
one? It’s usually on the walls, if they’re there at all. So, we design our spaces to militate
against the new forms of digital learning.

And here’s the Meet the Learner 2.0 now. What students do now and what I think you’ll
find that your organisational employees do as well is not only do they consume content
but they also produce content. They are prosumers. They also share content and
repurpose and remix that content.

My slides, by the way, are often remixed. These ones I’ve borrowed from somebody
else with his permission. You’ll see at the bottom left-hand corner is the CC license,
Creative Commons license, which gives you and anyone else who wants permission to
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these slides, any of them you can use later on if you wish.

So, what’s happening is I think that learning is changing. Not the way that the structure
of the brain changes. The brain isn’t being rewired in any way. What is happening is
the processes by which we learn are changing. And this is some of my students. I took
this from the back of the hall, all right? It’s a hall where there are lots of rows and tiers
and yet the students have personal devices they bring in. And those devices give them
that personal window on the world. They can drill down deeper. As I’m talking, as the
lecturer is talking, they can ask questions of each other, they can drill down deeper and
they can Google and they can find out more about the information that’s being given to
them, the facts or the theories or whatever. And students who are doing this are telling
me they find it very, very creative indeed and also it helps them to keep on track with
what they’re learning.

So, let’s just go ahead and talk about the new pedagogies. I’m rushing through this
because I know we’re kind of short on time, but I showed you this image earlier on.
Anyone have an idea what it is? Mandelbrot, did someone say? Yes, it’s a Mandelbrot
set. It’s the mathematical equation that recurses to infinity. And the interesting thing
about it is it keeps reproducing itself smaller and smaller each time.

And this, ladies and gentlemen, colleagues, is what I think a lot of education and what a
lot of training does. It just reproduces, and that is okay to a certain extent. Compliance training, for instance, you have to reproduce accurately otherwise someone is going to get injured or killed. But there are many aspects of workplace learning where you can go beyond that into what we call the discursive, where open-ended and possible alternative solutions are offered. You see, if you carry on with recursive solutions and recursive education and learning, this is what you get. So, you get this teacher here offering this equation and you can see the equation results in infinity. And so the teacher tries to check that the student has understood. And this is what the student comes up with. Very recursive, isn’t it?

Because it’s rote learning. It’s learning that’s a very superficial level. It doesn’t go down deeper into the areas where you can apply it in different ways. It’s not a transferable skill. And what we’re looking for in organisations today is people with transferable skills, skills that they can apply to new and unusual problems and adapt and change and be agile in the way they work and learn. So, we need to go towards the discursive, I think, and there are ways of doing this with technology which I’m going to come to now.

First theory that I want to talk about is the theory that originated in the work of Deleuze and Guattari and was known as rhizomatic learning. Now, this is a chaotic form of learning which eventually forms some kind of order and it very much resembles, I suppose, the neuro-structures of the brain because it’s about root structures. Rhizomes are underground root structures which are chaotic, they grow in many directions, and there’s no centre to them. They just continue to grow, which is very much like the web as well.

And I think this was Dave Cormier, a Canadian philosopher, who talked about knowledge being negotiated amongst people in a community of practice, the Lave and Wenger idea of communities of practice. So, the negotiated idea, there’s no longer any kind of immutable knowledge in that sense. Everything can be negotiated. Now, again, there are issues with that, but it’s an interesting theory which represents something that’s happening in the digital age.

Here’s another one. Connectivism, the idea that you store your knowledge now with your friends. If you’re using personal learning networks and you’re using technology which allows you to connect with your community of interest and practice, then you can actually literally store your knowledge with your friends. You don’t need to know everything anymore; all you need to do is to know where to find it when you need it. So, it’s a very immediate form of learning, and we call it connectivism. This is the work of George Siemens and Stephen Downes, and making connections, I suppose, you can read that for yourself. It’s about organised learning that has emergent properties. It’s about self-organised learning.
And talking about communities of practice, if you can imagine the guy on the left there standing next to the table, if he connects with only three people in the room, that’s a form of networking. But of course, that doesn’t stop there because each of those probably has connections as well. And before you know it, you’re in a massive network of knowledge.

And I’ve used this with my own students. In Twitter, for instance, we have a back channel with a hashtag that’s peculiar to the module, and I remember a couple of years ago some of my students discussing on the back channel on Twitter one of the books I had set them to read. And they mentioned the author’s name and they had a question about it and they were discussing it. And I looked at it, and I thought, ‘I’ll re-tweet that.’ And I re-tweeted it knowing full well that the author follows me on Twitter. Within 20 minutes, he was online answering the question direct from wherever he was in the world. And the students’ faces – and the whole place was suddenly animated and then they were all inspired because they were talking to the author direct. So, this kind of connectivity is incredible when it’s immediate and when it’s applicable and relevant in that context.

So, another couple of ideas here. Paragogy, the work of Corneli and Danoff, is quite interesting. This is where students and teachers or colleagues become co-learners. They work together and they learn from each other. The idea that actually there’s no power differential there, it’s equalised.

And heutagogy, which is Hase and Kenyon’s work – Stewart Hase and Chris Kenyon – the idea that it’s self-determined learning. Did you know that the gold medallist in the Olympics, in the javelin, did you know that he had no coach? He learnt all of his techniques off YouTube. That’s a fact. I mean, it’s incredible. Some autodidacts out there would actually resonate with that. But, you know, this heutagogy idea is just one of these emerging properties or theories from the digital age.

Personalising learning is important as well. I won’t go into this in too much detail but these four ideas here are what most of education was like until hopefully recently when we started to break down some of the silos, for instance, between subjects and show that they connect and so on. But we don’t want this. We want to avoid this if we can. This kind of idea of standardised thinking. We want to avoid this result, don’t we? We want employees that are creative, unique, different, personal, people that will work together but have unique approaches perhaps to the job, and be creative. And the idea of design versus user experience comes into this personalisation.

The story goes that an architect was designing a university campus and he put all the buildings into place and they were all built and they said to him, ‘Well, in two months’ time, everyone’s coming to open the new university. So, where are the roads and the pathways?’ And he said, ‘Wait.’ They said, ‘What do you mean wait? They’re coming in two months’ time.’ He said, ‘No, wait.’ And so they waited and all the academics turned up and the students arrived and they began walking across the grass. And they made their desired lines across the grass and when they’d finished, he paved them over.
Because what you've got, you see, is user experience versus design, and there's a big difference between the two. This is back to the idea of students subverting what happens in the institute or organisations being subverted by the employees when they see something, how it can be done better. So, I think what the message from this is that when we're trying to scaffold those forms of learning for our employees, what we should be doing is trying to find out how they best learn and then try to support it rather than trying to push them in a direction that we want them to go. I think learning and development has a lot to learn about this.

So, personalised learning really is about acknowledging individual differences and trying to support them as much as possible. And Howard Gardner actually talks about this in a very big way. He talks about multiple intelligences as a kind of counteraction to the intelligence quotient idea which was very, very narrow and one-dimensional.

This is four different ideas about how we can leverage the power of connections. You might think this was a modern idea; actually, this came around in 1971 before the age of computing, before the age of the internet. It was said by a fellow called Ivan Illich, which some of you may be interested in following up on. Ivan Illich was an anarchic philosopher, but he had some great ideas about how we could use the power of technology to help people learn in various jobs and so on. And he talked about learning webs rather than funnels, funnels becoming learning webs where everyone was connected to everyone else and could work together. Tools of conviviality, he called them. This is a marvellous idea.

And the new learning environments, well, we need disruptive pedagogy, going back to Villemard's idea. We need disruption in the sense that it's a positive disruption where we can be pushed out of our stagnation, out of our inertia, into an impetus and momentum forwards, where change can happen.

And flipping the classroom is one of those ideas. I'm sure you've heard of it, where you flip the idea of instruction and assimilation so that assimilation is done within the presence of an expert, whereas instruction is hived off to be done at home beforehand. It's not a new idea but the flipping, I think, is – the flipping idea has actually taken some resonance lately and some acceleration. So we flip the class and we also flip the teacher; I act as the awkward student and my students have to come in and defend their ideas to me. That helps them to think more critically.

So, I think the future is going to be social. It's going to be personal. It's going to be connected. It's going to be all those things. I think in the future a lot of things will happen. I predict that in several years' time, your grandchildren are going to sit on your knee and ask you various questions like, 'Granddad, what was a cable?'; 'Gran, what was it like to sit in a traffic jam?'; and the best one, 'Did you really have to touch a computer to make it work?' I think these things are here.
You see, the thing is there are four big technologies we have to look out for now: there’s genetics, there’s robotics, there is artificial intelligence, and there is nanotechnology. Those are the four big future technologies that are going to make the impact that will change the way you work and learn, and watch that happen. It’s going to happen quite quickly. Ray Kurzweil says that change is no longer linear, it’s now exponential. We’ve got the J-curve going on. And as Gupta said yesterday, it’s very difficult to keep up with these changes, but we have to try if we can. We’ve got to make sense of it.

That’s my son there. Personal technology, well, I think with the best will in the world, we will never stop it happening. People are definitely wedded to their technologies. They are taking them with them. We’re missing a huge opportunity here if we do not leverage the power of this in our workplace and give our colleagues and our employees the ability to learn on the move by using their handheld devices. We’ve heard of “bring your own device”; well, now organisations in Europe and the UK are actually talking about choose your own device, where the organisation provides three or four different choices and the employee chooses which one they want and the employer provides it for them and then all the compliance and the safety and the security issues are kept under check.

But this is students taking notes. Students will find ways to do things. I see some of you doing it as well, taking pictures of the slides. I don’t mind. That’s free and open for use. You see, that’s the whole point about technologies: we find new ways to use them which were previously unheard of. And some of my colleagues say, ‘Well, that’s not learning.’ Actually, it probably isn’t, but what they do next with them is they repurpose it and they reflect on it and they put them into blog posts and they clip them and twist them round and do all sorts of wonderful things with the technology in their hand.

And here’s just some of the mobile attractions. I won’t bore you with the details of this but I think the interesting one is the peripersonal space, which is the space between you and your device. And, you know, the way you use that device and the way you interact with your environment I think is going to be increasingly interesting as well with things like augmented and virtual reality capability. That in itself is going to be an incredible new tool for the workplace.

And it’s about identification as well. It’s about learning but identifying yourself within a particular tribe, if you like. It’s about new digital cultural capitals to kind of purloin Bourdieu’s idea. And the membership, the tribe, I think is going to be increasingly important because it helps our identity in some ways.

So, back to personal learning networks, I think this is where we see a lot organisations going now. Connecting their workforces so that we can collaborate, share ideas very quickly at the speed of thinking if you like. And a few other ideas: new learners – this is just to close with – new learners, says John Waters, have these attributes. One of them is to be the nodes of their own production. I mentioned this earlier on, that we’re now prosumers. All of us are creating content as well as, I suppose, consuming it, and that leads to a number of possibilities and also challenges for all of us in the workplace.
So, ‘We learn by making,’ said Seymour Papert – sadly passed away a few months ago – but we learn by making is now otherwise known as constructionism, socio-constructionism, where you learn through a process of solving problems and looking at the underlying situation and problems that you are working with and making something, producing something to perform your learning, if you like. But we also have student maker spaces and fab labs now, which are very interesting because it’s not just about hacking into spaces and fixing things, it’s about actually creating things as well and that creates a lot of excitement in schools and universities and I’m sure it does in certain workplaces as well.

The architecture of participation that Barsky talks about is where we generate our content using all these tools and they’re all freely available now. And to actually talk about this in a kind of social context, we take Vygotskyan theory, what you can learn on your own is not as much as what you can learn with somebody else supporting you, a more knowledgeable other person maybe your mentor or the supervisor or whoever.

But there’s a third area that we can never reach. Now, traditionally, the more knowledgeable person has been that extra zone of proximal development, that scaffolding if you like. But today, we can also argue that technology can also form that scaffolding, digital scaffolding, if you will. And, I mean, I mentioned the Kenyan javelin thrower; there’s a lot of other possibilities there for work-based learning. There’s a lot of gold dust out there – a lot of rubbish also on YouTube, but there’s also a lot of gold dust out there that you can use for nothing.

So, finally, the new literacy. You can imagine skills eventually become competencies. They become unconscious, they become rehearsed. But to actually get to another stage you have to do something first and I’ll give you an example. I learned to drive in England. I learned to drive on the left-hand side of the road, the right-hand side of the car, you know, the gearstick and mirror-signal-manoeuvre, all the Highway Code, following the signs, stopping at red lights and so on. All of these things became ingrained in me and now I forget what I’m doing when I drive to work. I don’t even think about driving unless something happens like a cat running out into the road in front of me. But the point is, to actually go to another country and do the same thing, that becomes a problem, and this is where you need literacy. So, when I went to America to work, I was sitting there on the right side of the road, the left side of the car, there was no gearstick at all, it was automatic. It frightened the heck out of me, I tell you. And the road signs were all different. Different protocols, I suppose, different ways of working out social ways and within that, driving along the road.

So, I had to relearn in a new culture and all the old literacies came back to me to be learned again. And before you reach mastery I think sometimes that is the thing that you have to do, and I’m putting it to you that actually digital environments are an alien environment for most of us. So therefore, the literacies we learned in school, reading and writing, listening and speaking, have to be not removed, but actually supplemented.
They have to be extended, if you like, to cope with the new demands of the technology, so you have to learn and then unlearn and relearn some things.

And this for me is one of the 21st century key skills for workers now, is that we can have – we have to not just learn things constantly but we have to unlearn and relearn some things as well as concepts change and as things move on and new ideas come in. And here’s an idea for you to think about. That’s not a real picture by the way; I just thought I’d point that out to you. And this is a Photoshop and this kind of thing happens all the time. People deceive each other online. There was a video that went viral on Facebook last week about somebody changing a bulb 2,000 feet up and it wasn’t real. But over five million people actually liked it. And I’m thinking people get easily fooled by these things. So, all of us, we need to be savvy, tech savvy, and we need to have digital literacies now to actually be able to detect this kind of thing.

I show my students this, I say, ‘What do you think is wrong with it?’ And then, ‘Ooh, is it 70%?’ ‘That’s not Thomas Edison.’ Yes, it is. Eventually, they realised what I’ve done– and the literacies, I think, digital wisdom is one of those new literacies when you think about it.

Here’s I suppose a matrix which I’ve tried to create which shows nine of the key digital literacies that I think we need to all understand and try to appropriate if we want to survive in the digital age and be effective. So, there’s dimension on the top here, which is the social dimension. But on the right-hand side you’ve got the personal dimension and on the left-hand side, you’ve got knowledge management. But the important one is right in the middle, what we call transliteracy. Transliteracy, for me, is the ability to be able to equally use different platforms and apps and tools and technologies to be able to equally powerfully transmit your message or communicate. So, whether you’re on YouTube or face-to-face or using Facebook or whatever, you should be able to use all of them equally well if you are transliterate. That’s the whole idea behind that idea and I think that’s increasingly going to become important in the digital age as well as in the workplace.

And a final diagram for you. This is Mark Federman’s work. He talks about the four Cs. And we know about the 3 Rs, reading, writing and arithmetic. The four Cs actually extend that, as I mentioned earlier. It supplements, if you like, but does not supplant the literacies we already have. So, connection, how do we connect to find the right content? Who do we connect with? Who’s going to be in our personal learning network? Who are we going to choose to follow on Twitter that maybe will provide us with really good content? I have to say that, you know, accounting for all my degrees and qualifications over the years, so I’ve been in the business 40 years as of January this year. 40 years is a long time. I’ve seen a lot of changes, but I’ll tell you what the most powerful professional development I’ve ever had recently comes through Twitter, from the people I follow on Twitter. Strange but true, because I learn something new every day from following professors and colleagues who are on Twitter, who find good stuff and send it out and share it. So, connections are the first one.
The second one I think is the context, being able to understand the context of what you’re in. I think content used to be king. I mean, Bill Gates said this this many years ago. Content used to be king, but now content is a tyrant because there’s so much of it. Context is now king. And it’s the way that you find that content and the context behind it is going to be increasingly important.

The third area is complexity. Understanding the complexity and trying to be able to simplify it so that you can understand it better.

Which brings us to the fourth C, which is making meaning, connotations. And there’s another complete model for you to look at.

So, with that, I’m just going to finish with a quote for you from Socrates. Oh, jeepers. I’ve just noticed. Sorry, I’ve made a mistake of asking my son to find a picture of Socrates for me. Oh dear, dear me. He’s a football fan. This is Socrates, but it’s the wrong Socrates. You heard me earlier I mentioned about iteration and reiteration, remix and repurposing. Provisionally, I can change this easily; I can put this right, believe me. It wasn’t Socrates, it was Plato that said it. So, I’m going to find a picture of Plato now. Wait for it. Ready? Damn it, that’s Socrates. One final chance here, I think that’s Plato. I’m not sure but I think it is. What you’ve just witnessed, ladies and gentlemen, is the evolution of content; you see this on Wikipedia a lot. It’s content that begins by being slightly inaccurate or dodgy but eventually over a period of time, as people come to crowdsource the knowledge on it and people come to consult and polish and edit it, it gradually becomes fitter for purpose. So, the survival of the fittest content, or Darwikianism. And with that, I hope you’ve enjoyed that and got something out of it. Thank you very much.
INTRODUCTION

Open innovation

Studies on open innovation have gained rapid growth ever since the concept was first introduced by Henry Chesbrough (2003). It was defined as “the use of purposive inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation” (Chesbrough, Vanhaverbeke, & West, 2006, p.1). In a world of widely distributed knowledge and fast technology advancement where product life cycles are drastically shortened and competition becomes ever intense and global, innovation becomes risker and more costly (OECD, 2008). The central idea behind open innovation is that it builds a system to open up the innovation process that allows organisations to respond flexibly to new technologies and explore a wide range of internal and external sources for innovative opportunities through partnering with employees, customers, suppliers, public research institutions and universities.

One of the popular models of open innovation is idea competitions such as implementing “hackathon” events, which encourages competitiveness among contributors by rewarding successful submissions. This method provides organisations with many benefits (Schutte & Marais, 2010; Marais, 2010), including:

- Inexpensive access to a large quantity of innovative ideas
- Reduced cost in research and development expenditure
- Improvements in customer targeting and customer-product interaction
- Inexpensive product testing and brand marketing
- Reduced innovation time and risks
- Potential for synergism between internal and external innovations

Open innovation studies have focused mainly on large and multinational enterprises or high-tech manufacturing firms, although innovation in small- and medium-sized enterprises (SMEs) is not totally new. (e.g., Hossain, 2015; van de Vrande, de Jong, Vanhaverbeke, & de Rochemont, 2009) there are methods to explore that can help SMEs successfully implement open innovation. This paper reports a case of open innovation in seeding learning innovations in the continuing education and training (CET) sector in Singapore.
Singapore. It focuses on the process of the open innovation initiative, and identifies the different types of partnerships which characterize open innovation and highlights the importance of strategic planning to help generate successful open innovation.

**CET in Singapore**

CET is critical to Singapore’s effort to compete in the global economy and respond to its major economic and social challenges. In the face of a rapidly changing economy, one of the major challenges in CET is to enable Singaporeans to participate and develop deep skills and gain mastery and expertise to raise workforce productivity, competency and resilience through applied learning and a culture of lifelong learning. To do so, we need to build high-performing CET organisations and CET professionals to support industry growth, bridge skills gaps, raise industry standards and enhance the employability of workers (Karmel, Bound & Rushbrook, 2013).

The CET sector is by nature complex and dynamic. CET professionals in Singapore typically perform the roles of Adult Educator, Training Management Professional and Human Resource Developer. Figure 1 was an attempt to illustrate the CET organisations that CET professionals work in. These organisations offer a wide range of programmes covering both in-house and public training needs, and stretches from PET (Pre-employment training) to CET. As we can see there are no clear-cut boundaries between PET and CET and the distinctions are increasingly blurring. There could be more overlaps between the offerings of these organisations.

With the global trend in adopting technology for teaching and learning, Singapore continues its national efforts to catalyse the adoption of learning innovation through a variety of initiatives and schemes. As the current CET learning mode is dominated by
classroom-based learning, which limits accessibility to learning and transfer of learning to workplace, reshaping learning mode is in urgent need. A shift in mindset and culture from the traditional instructor-led type of learning to a blended mode of learning is required for technology-enabled CET to take root and be adopted by individuals, enterprises and the CET community (IAL, unpublished). Innovation labs, facilities, equipment and tools are set up to facilitate collaboration among CET stakeholders, from adult educators and training providers to technology vendors, enterprises and championing agencies. Endeavours are made to encourage the CET community to exchange current and best practices, and the latest in learning technology, as well as to share their experience and relate how they overcome challenges in using learning technology and instilling innovation to improve learning. This paper reports one such endeavour – InnovPlus, and highlights the importance of strategic planning and partnership that facilitates the implementation of open innovation.

A Case of Open Innovation – InnovPlus

What is InnovPlus?

InnovPlus is an initiative of iN.LAB to facilitate the rapid development of prototypes that could address challenges and exploit opportunities for better CET outcomes and delivery. It is organised as a competition for organisations, learning experts, solutionists and technology partners to collaborate and present a holistic solution to real learning challenges faced by the organisation and/or groups of learners.

The scope of InnovPlus innovation mainly covers (but is not limited to) five areas related to the functional roles of the CET professionals: pedagogy, learning technology, training management, application of skills and workplace performance, assessment and credentialing. InnovPlus is conducted once every six months with cash awards for competition. Winning teams are also eligible to apply for the prototype grant to develop the prototype and trial it within the maximum duration of 6 months. In addition, the winners must co-fund 10% in cash or in kind. In-kind contribution refers to contributions, other than monetary, that defray a portion of the project’s eligible cost. Additional costs incurred during the project duration will be fully borne by the winners themselves. In return, they will share their experiences and prototypes at iN.LAB’s showcase and sharing sessions with the wider CET community.

Process of InnovPlus

There are five key phases for InnovPlus activities, as shown in diagram 1.

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2 Set up as the hub for learning innovation in CET, iN.LAB provides a conducive and creative environment for CET practitioners to collaborate with and experiment in creating cutting-edge learning solutions and innovations. iN.LAB also provides resources and facilities, targeting to nurture innovation in all aspects of CET, from curriculum design and content development to delivery. In sum, iN.LAB takes on five key roles: (1) space for innovation, (2) strengthen capacity, (3) spur knowledge exchange, (4) matchmake expertise, and (5) facilitate collaboration (iN.LAB, 2016).
**Phase 1: Challenge Statement**

In this phase, the participating organisations or what we call Challenge Owners (COs) identify the challenges related to professional development and training. The challenge statement should clearly describe the current situation, identify the challenge / gap / unrealised potential, describe the requirements that must be incorporated in the solution, spell out the ways in which the proposed solution will be evaluated, and also list the deliverables for the solution. iN.LAB team evaluates the challenge statements and suggests refinement based on three broad criteria:

- Relevance and criticality to meet the needs of the cluster
- No current, clear, existing or well-established solutions to the challenge
- High impact to the cluster & potential for scalability

The refined challenge statements are then put up to the CET community via an online forum, for online open application by potential Solution Partners (SPs). To foster better understanding of the challenge statements, Challenge Owners will answer queries from potential Solution Partners via the online forum.

**Diagram 1  Process of InnovPlus**

**Phase 2: Information Session**

The iN.LAB team holds information sessions for potential Solution Partners (SPs) on the operating details of InnovPlus competition. These information sessions are done either through face-to-face sessions or webinars, at the availability of the potential Solution Partners.
**Phase 3: Pitching to Challenge Owners**

One potential Solution Partner teams up with another or a few more Solution Partners to work out a potential solution proposal on how the challenges can be overcome. Each Challenge Owner forms a three-member panel, comprising a Management Representative, a Human Resource Development or Learning and Development senior officer and a Line Manager, to evaluate potential solutions proposed. The pitching sessions are held at iN.LAB. After hearing all the pitches from potential Solution Partners, each challenge owner selects a team of Solution Partners whose ideas may best meet their needs, to form the Challenge Team. Challenge Team then collaborate closely to co-develop the ideas into a potential solution and go into the final round of the competition, known as the InnovPlus Presentation Day.

The proposal should include information such as: clearly articulated problem statements, specifications of solutions, technical/innovation maturity, estimated cost of prototyping, plan for execution & partners for prototyping, credibility and expertise of the Challenge Team and IP arrangements.

**Phase 4: InnovPlus Presentation Day**

On InnovPlus Presentation Day, the Challenge Teams set up booths at iN.LAB to explain to participants (CET community) their sample/trial kit of the solution and demonstrate how it achieves its intended purpose(s). They also present how the envisaged solution could deliver the stated outcomes with a demonstration to the Evaluation Panel. The evaluation criteria for InnovPlus cover five aspects regarding the concept, innovation, impact and scalability, team composition and sustainability of the solution. Awards are given on that day to winning Challenge Teams.

The inaugural InnovPlus Presentation Day was held on 26 April 2016. The quality of the challenge submissions led to three instead of the targeted two InnovPlus Flame awards being given out.

**Phase 5: Prototyping and Case Study**

The InnovPlus awardees spend up to six months to develop the prototype of the innovative solution. Completed prototypes are to be showcased at iN.LAB or at other appropriate platforms, where end users could try out the prototype (products and services) to (a) share the final solutions or (b) provide and gather further feedback for refinement. Awardees may proceed to seek further funding from other sources if needed. Awardees may also be invited to participate in the case study and/or research papers to document its experiences and learning points in developing and trialling the prototype. The inaugural InnovPlus is still in process, and the awardees are currently working on the prototypes. It would be interesting to look at the open innovation process upon the completion of the prototypes.
DISCUSSIONS

This paper documents the important phases in the process of implementing InnovPlus. The flow of activities serves as a guide while the actual implementation requires much ground work that may have not been reflected in the diagram, for example, crafting problem statement template and drafting evaluation criteria, engaging Challenging Owners, Solution Partners, Challenge Teams and Evaluation Panel, as well as providing other administrative and technical support such as in publicity, outreach, registration and catering.

The case of InnovPlus demonstrates the ample opportunities for the establishment of partnerships in Open Innovation. In Phase 1, when the problem statements are put onto the online forum, some solution providers collaborate with either their existing partners or new partners to form a team of Solution Partners in order to work out a solution for the problem. During the information session in Phase 2, some solution providers make new contacts for potential open innovation partnerships. While many of them remain competitors, whose proposals are to be selected by the Challenge Owners, some find greater potential if they team up as partners, either to compete for the selection by Challenge Owners or for new opportunities for future collaboration. The dynamics in the relationships continue to show in Phase 3. Some Challenge Owners select the Solution Partners and form a new partnership as the Challenge Team to bid for the InnovPlus awards. A few Challenge Owners select more than one team of Solution Partners to form the Challenge Team, therefore, the previous competitor in Phase 2 become partners in Phase 3 for the task in Phase 4. After collaboratively winning the awards in Phase 4, the Challenge Team and Solution Partners need to sustain their partnership in Phase 5 in order to achieve success in prototyping their proposed innovative solutions.

It is clear that the relationship between the parties is not fixed; it is dynamic and evolving in each different phase. It evolves depending on the degree of partner heterogeneity, innovation type, and degree of openness of the partnership. Open innovation partnerships facilitate the value co-creation through the joint efforts and collaborative relationships of the participating firms and enable them to develop and introduce an entirely new market, creating substantial economic value and opportunities for all parties involved in such a collaboration that focus on catalysing innovation (Han, Oh, Im, Chang, & Oh, 2012). In building partnership in open innovation, firms and organisations need tools and processes that allow them to fully exploit open innovation opportunities in the development and management of open innovation relationships (Slowinski & Sagal, 2010). As observed in this case of InnovPlus, the networking efforts and strategic planning that iN.LAB team has put in definitely contribute to the establishment of partnerships among the Challenge Owners and Solution Partners.
CONCLUSION

The case of InnovPlus illustrates feasibility of open innovation in the CET context in Singapore. It demonstrates how the parties can explore opportunities for open innovation and build on external strengths for improvement. As open innovation is gaining momentum and many institutions and organisations are seeking opportunities for open innovation, the case of InnovPlus could be a useful reference in future open innovation initiatives and practices in both general education and CET sectors, in other similar contexts across the region. The parties involved will benefit from the partnership formed during InnovPlus, but how to make the partnership sustainable beyond InnovPlus remains a question. To conclude, we quote Professor Quyen Nguyue, ‘Successful innovation is not a single breakthrough. It is not a sprint. It is not an event for the solo runner. Successful innovation is a team sport, it’s a relay race’.

REFERENCES


BACKGROUND

The participatory action research project was a joint pilot project between TAFE Queensland Gold Coast Region, TAFE Queensland Brisbane Region, and incorporating TELLS network and Griffith University.

The project sought to shift the current use of iPads as a “Substitution” device to one of “Augmentation”, “Modification” and potentially “Redefinition” where the combination of iPads, APPs and iTunes U course technology acted as a vehicle for the creation of new delivery models, increased Educator and student digital literacy as well as student focused tasks relevant to employment outcomes that were previously inconceivable.

The Action Research project Trial focused on two programmes from the TELLS programmes. AMEP (Adult Migrant English Program) has the aim to provide settlement focused English language tuition and related services to newly arrived migrants and Humanitarian Entrants who have less than functional English. The other programme, SEE (Skills for Education and Employment) is for helping eligible job seekers improve their language, literacy and numeracy (LLN) skills.

Risk and compliance

The present TELLS contract will expire in July 2017; therefore, there are risks associated with other competitors in the market competing in the tender process for the AMEP contract. Hence we need to offer products and services that will provide us with a competitive edge and remain compliant with the services offered by TELLS as listed below:

TAFE Queensland provides all AMEP General Services and programme delivery including:

- English Language Proficiency Assessment of all AMEP clients
- Referral of AMEP clients to appropriate tuition option: Face-to-Face tuition, Educator-Assisted Distance Learning, Home Tutor Scheme, plus Self-Paced Units
- Delivery of Face-to-Face tuition and Home Tutor Scheme to AMEP clients
- Delivery of Special Preparatory Programme, Citizenship Course, Settlement Course and Settlement Language Pathways to Employment/Training Course
• Provision of counselling services to AMEP clients other than AMEP Distance Learning clients (including exit interviews)

• Delivery of Home Tutor Scheme

The TELLS SEE Contract expired in July 2016. The SEE programme provides for up to 800 hours of free training which can be undertaken on a part-time (10 to 19 hours per week) or full-time (20 to 25 hours per week) basis over no more than a two year period. Attendance is mandatory for this programme as it is considered a job-ready programme. The programme has the flexibility, on a limited basis, to offer a mixture of both face-to-face and distance mode training which is referred to as ‘mixed mode’; however, there could be risks associated with non-attendance and attaining the required ACSF indicators every 100 hours in the mixed mode deliveries.

Objectives

1. Trial the use of iTunes U linked to TELLS iPads to “transform” the design, development, distribution and delivery of content for SEE (Skills for Education and Employment) and AMEP (Adult Migrant English) programmes for TAFE Queensland TELLS network

2. Joint Project between TAFE Queensland Brisbane and Gold Coast Regions
   • 5 x Gold Coast TELLS nominated educators to pilot writing content and deliver two units from AMEP programmes uploading to iTunes U and delivering in classroom using TELLS iPads including developing lesson plans
   • 1 x Brisbane TELLS Nominated educators to pilot writing content and deliver two units from SEE programmes, uploading to iTunes U and delivering in classroom using TELLS iPads including developing lesson plans

3. Increase Educator capability and capacity to incorporate teaching and learning technologies into content development and delivery to align with TAFE Queensland Educator Capability Framework.

4. Provide a vehicle to develop and deliver consistent product across TAFE Queensland TELLS programmes.

5. Increase student and business satisfaction outcomes with TELLs programmes

Issues

1. Gold Coast deployed more than 100 iPads for the use of TELLs educators and students. The project acted as a positive change agent for the way corporate classrooms sets of iPads were managed, operationalised and supported as well as increased staff awareness and capability in their use. Since the TELLS project completed in June 2014, the implementation and traction to use iPads into delivery has slowed. This project seeks to collect data to explore this issue.
2. TELLS products currently not included in TAFE Queensland strategic rollout of state-wide secondary product development or LMS “Connect” rollout. This project seeks to address a potential solution to this issue.

3. TELLS corporate iPads are not deployed as 1:1 devices, but as “1: to many device” model. Project to explore the potential business opportunities, barriers and issues with deploying content via iTunes U to “1: many” iPad delivery model. This project will collect data with recommendations for deployment.

**Strategic Impact for addressing these concerns**

- Enhanced delivery outcomes for TELLs Programmes across TAFE Queensland regions
- Create “point of difference” in a highly competitive international market
- Align TELLS programmes to TAFE Queensland’s strategic direction of providing consistent quality product distributed electronically via LMS (iTunes U).
- Increase Educator Capability to design, develop and deliver new delivery models incorporating the use of technology into practice.
- Increase TAFE Queensland’s presence in international markets.
- Educator capability building aligns with TAFE Queensland Educator Capability Framework. In particular the “technology for learning” domain, which strives to “grow our portfolio of technology enhanced learning options and strive to lead the marketing in delivering quality educational outcomes through technological innovations”.
- Opportunity to enhance employment outcomes and increase digital literacy of our students.
- Enhance and leverage off TELLS iPad Project (June 2014)
- Contract renewal risk for SEE and AMEP programmes.

**Action Research Problem question**

1. Can iTunes U online courses act as a change agent/ catalyst to increase Educator capability to use iPads in new delivery models for AMEP and SEE programmes?

2. Can iTunes U online courses increase/ enhance student engagement and outcomes for those studying SEE and AMEP programmes?
THEORETICAL FRAMEWORK

The action research project was a “collective self study of practice to inform and transform”, (Kemmis S, McTaggart R, Nixon R 2014) Adult Migrant English Programmes (AMEP) and Skills for Education and Employment (SEE) programmes for TAFE Queensland. The project involved building educator capability to use iPads and iTunes U APP alongside collecting data from six AMEP and SEE educators across TAFE Queensland Brisbane and Gold Coast Regions throughout the project timelines.

Using the ADDIE instructional Design theoretical five step problem solving framework (Schlegel, M. 1995), to analyse, design, develop, implement and evaluate the action research project enabled the project plan to have clear goals and tasks to meet the overall objectives within the given timeframes. The ADDIE model is also cyclical in nature and also aligns with the action research spiral. (Kemmis, S., & McTaggart, R., & Nixon, R.2014).

<table>
<thead>
<tr>
<th>Phase</th>
<th>Key Task</th>
<th>Output</th>
<th>Project Team Responsibility</th>
<th>Start Date</th>
<th>Milestone Due Date</th>
</tr>
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<tbody>
<tr>
<td>1: Analysis</td>
<td>Entry Surveys Educators/ Students Literature Review</td>
<td>Survey Tools Entry Data Literature review Report</td>
<td>Project Leader: Educational Designer SEE/ AMEP Teachers</td>
<td>1/12/14</td>
<td>12/2/15</td>
</tr>
<tr>
<td>2: Design</td>
<td>Review current Delivery models Training iTunes U</td>
<td>New Delivery Model Framework Draft content uploaded to iTunes U test site</td>
<td>Project Leader: Educational Designer SEE/ AMEP Teachers Technology Trainer</td>
<td>21/11/14</td>
<td>12/12/14</td>
</tr>
</tbody>
</table>
Table 1. Action Research Project Plan

| 3: Development | TELLS/ Region iTunes U Site Content development Delivery strategy Training | TELLS Institute Site Content uploaded to Institute Site Lesson Plans | Project Leader: Educational Designer SEE/ AMEP Teachers Technology Trainer | 12/12/14 | 30/1/15 |
| 4: Implementation | Delivery commences Reflection journals | Project Leader: Educational Designer SEE/ AMEP Teachers | 2/2/15 | 30/4/15 |

METHOD, TECHNIQUES AND PROJECT FINDINGS

The SAMR Framework (Puentedura, R. 2009) provides a model to measure educational capability of using educational technology in the classroom. The goal was to measure the shift from using iPads and iTunes U courses as a “substitution” for current delivery strategies to one of “augmentation”, through to “modification” and finally “redefinition” where the technology enabled means speeded up the creation of new delivery strategies that were previously inconceivable. Entry and exit survey questions as well as focus group reflective journals formed the basis for data collection and analysis. This project also aligns with “classroom action research “ as purported by Kemmis S, McTaggart R and Nixon R (2014) in that the enquiry and qualitative data will be collected by the educators in this project with the view that educators will make “judgments about how to improve their own practices”. (Kemmis S, McTaggart R, Nixon R 2014)
Survey questionnaire was distributed via survey monkey in February 2015 and again in August 2015 to the six educator participants. Comparative data analysis below.

The analysis indicates that with the introduction of using iTunes U APP alongside with the iPads there was a drop from 80% to 40% using this technology as a substitution device for current delivery practices. Further analysis indicates 10% increase in augmentation, 15% increase in modification to delivery, indicating significant change in delivery tasks. Finally where there was no indication of using technology to redefine delivery at the start of study, the data indicates a 5% shift to redefine delivery and incorporation of tasks that were previously inconceivable.
The shift in educator capability to move from substitution to one of redefinition is also supported by the focus group reflective journals and educator discussions.

**Entry Reflective Journal feedback**

“Haven’t been using iPads in any way. Prefer Communicative Teaching approach - very interactive. Wasn’t sure how iTunes U could be used in this way. Content for settlement course developed by TELLS (very specific) and supplemented with Educator generated worksheets/activities”

“The course was delivered using a combination of audio/visual, paper-based and occasional internet resources. Largely paper-based worksheets. I developed the majority of content myself, with occasional third party resources. Rolling starts mean that lock-step is not possible with our cohort. We used a combination of group work and learner-centric self-paced learning, differentiated according to abilities.”

“Combination of resources – worksheets, project based activities, spelling/phonics, audio/DVD files. CSWE textbook, TELLS resources, Cambridge English textbook, Australia Network, own resources. Mixed mode – group work / pair work, Educator centric, minimal learner centric. Desktop computers (1 session per week), iPads (1 session per week)”

“Face-to-face with a variety of teaching strategies and activities, including worksheets, group activities, controlled practice, role plays, group work, and one computer lesson a week. Variety of ESL materials including text books, courses, online material and my own resources. My own content uses a wide range of resources. Mixed – group work, some Educator centric, some learner centric. Very rarely any self-paced learning.”

**Exit Reflective Journal Feedback**

“SEE (Youth Group): Students developed their own device management strategy. Students actively engaged, using the iPads to design, script and create their own video assessment pieces. Attendance very high on the days iPads were structured into the lesson. Students were able to choose the best learning mode for their individual needs as well as request that more of their assessments items could be submitted in this way “

“AMEP (Settlement group): Students able to work at their own pace, self directed exploring and accessing relevant web sites then emailing links to home for future reference outside of class time. Previously this was not possible without the use of iPads and iTunes U course. I was available
to spend more one on one time with the students who needed the additional support. Students also requested access to the online learning material (iTunesU Course) outside of class time. They were able to do this by downloading on their own devices, enabling access 24/7.

“Have gained a lot of confidence since starting with the program. Those students who are very comfortable with the iPad find iTunes U easy and beneficial. These students liked to have the iPads as part of their learning program. Shared the program idea with other Educators during a Staff meeting and other Educators have now come on board, some are happy to develop their own resources for iTunes U.”

“I shared my own research findings with colleagues and supervisors. Also shared in staff meetings about the progress. Other staff were very receptive but had no prior knowledge of iTunes U and all expressed the need for PD before they could try anything like this in their own classroom. It was an effort! Some days it did not feel worth it. However when I watched students creating mind-maps or answering quizzes online I felt excited to see their progress. I’m convinced that they need digital literacy alongside English language development in order to work in Australia. I enjoyed working alongside students as they progressed through the course – seeing their own satisfaction as they completed each task.”

On collation of the feedback, survey data and discussions with educators in the pilot and observations, the feedback was that iTunes U Courses were a catalyst to review current teaching strategies and implementation of structured self-directed e-content (iTunes U course) into classroom delivery. Additional reflective practice and reviewing of current delivery and content was also evident. Educators in the pilot are starting to share their new delivery modes with other educators and interest is now growing for others to implement iPads and iTunes U courses into their delivery for AMEP and SEE programmes.

Case Study Highlights: [https://youtube/5hQwFXV1y8s](https://youtube/5hQwFXV1y8s)

**SIGNIFICANCE OF STUDY...WHERE TO FROM HERE.. FUTURE PLANS**

The goal is to continue to support educator capability building in designing and developing iTunes U courses. These iTunes U courses can then be distributed across the TAFE Queensland regions to support AMEP and SEE programme delivery. This will then continue to transform current delivery models from a traditional teacher centric delivery programme to one of more self-directed learner centric model enhancing authentic life and workplace digital skills.
The iTunes U web based format of delivering content will also provide opportunities for TAFE Queensland to seek out cross border and international delivery of programmes. Identifying and resolving the technical challenges and support required are critical to the success of implementing new delivery modes, irrespective of the educational technologies used. Running “educational delivery pilots” supported by a “Participatory Action Research” framework adds legitimacy and validation for implementing new delivery practices. This also provides a basis for professional conversations around reflective teaching practices as well as informing and transforming strategic educator capability building.

**Informing and transforming teaching practice**

Once the technical issues were addressed and resolved, educators re-engaged with the process to build their own capability and were keen to share their new skills with their other colleagues. These observations are supported by the theory that ‘participation’, based on Jürgen Habermas’s (1996) notion of a ‘public sphere’, and ‘practice’ as shaped by practice architectures and ‘research’ are evidenced by the educators who were willing to participate, practise new skills and support the research.

Furthermore, the concept as purported by Kemmis (2009), that “action research as a practice changing practice” was evidenced by individual Educator self-reflection journals informing and changing practice, which led to inviting their peers into this “public sphere” (Habermas J, 1996) for further discussion, reflection and as a catalyst to encourage others to change their practice. Educators shared their journey of their newly developed technical and content writing skills, including new found delivery strategies and enhancing student engagement at informal and formal team meetings.

This project highlighted that action research is a justifiable framework to enhance and build capability by giving participants the opportunity and support to be “learning to do it by doing it” (Freire P, 1982). Our traditional approach to building educator capability was to separate the training into discrete domains or disciplines. These domains of pedagogy and andragogy were delivered separately to those of technical and digital systems training. Changing the approach to one of reflective action and self identification, assisted in providing the “just in time” skills development that aligned educational practice with technical skills development. This was evidenced by the iTunes U training course intentionally designed to assist Vocational Educators to develop pedagogically sound online content suited for the Vocational Adult English learning context. The course required educators to reflect on current course material and practice, learn underpinning theories of copyright, instructional design content development, APP and activities selection as well as the technical aspects to navigate their iTunes U course suited to the abilities and context of their own contemporary learning environment. This strategy of “learning by doing “gave meaning and purpose for their skills development.
and provided for a much richer context in which to learn and put these new skills into practice. Success was measured by the increased level of engagement, enhanced interest and willingness of students to trial new technology and skills even outside of the supported classroom environment.

This model of transforming educational practice can be transferred to other educator capability programmes to enable getting “buy in” from educators to incorporate educational technology into their own delivery and ”self identify” their own skills gap development.

Participating in a “cross regional POD” project was a valuable and transforming experience. This project not only influenced individual teaching practices and student learning but also provided an opportunity for shared understanding and discussions, including the challenges that each region faces.

In trialling the new modes of delivery and making a difference for their learners, each educator contributed to making far reaching changes for improving practice for TAFE Queensland TELLS Network. One key learning is that participatory action research empowers every teacher to inform and transform educational practices.

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Sympoisium Track 3 - Career Counselling and Development
INTRODUCTION

For this presentation - what is my central argument? ‘Good’ career guidance and counselling is a learning process; rather than giving advice or providing answers, it is about posing good questions that lead the client to deeper reflection. Career guidance and counselling can make a difference; it can foster agency within the constraints of what can be perceived as a perpetually changing world. To achieve this, I am advocating for constructivist approaches that pay attention to individual meaning-making, rather than overly-cognitive, rational interpretations of learning about self and career, but within ‘local’ cultural contexts. And, I want to critique it too, to avoid the slide into over-psychologised, ‘Western’ and individualistic thinking.

Story telling is inherent in all cultures and giving space to this within a career counselling intervention can, I argue, lead to more engaged and more effective outcomes. Established approaches have their place, once the client has had the opportunity to reflect and to explore what is meaningful for them in the context of their life and community. New, ‘constructivist’ approaches, including narrative, provide a space for deeper thinking and for meaningful exploration. Time for more reflexive approaches may be an issue in a runaway fast-paced world, but the time invested may lead to better outcomes than short-term, quick-fix interventions.

BEFORE GOING FURTHER - WHAT DO I MEAN BY CAREER LEARNING?

The meaning of ‘career’ is contested - it will vary according to its context as discourses, or ways of thinking and talking around a concept, relate to social, historical, economic, cultural and policy contexts. Within a shifting landscape the concept of career changes over time; from its emergence as a theoretically underpinned practice in the early twentieth century to diverse meanings in the twenty-first. These contextual issues question established thinking about how ‘careers work’ (to use a collective term) should be theorised and implemented in particular contexts. The term ‘career’ is related to words from the Latin, such as running; course, voyage, journey, race; direction; march and also carriage, and many current definitions make reference to movement, journeys and progression through life and work. A narrow dictionary definition of the noun ‘career’ will usually focus on a profession, with its sense of stability and progress. Interestingly as a verb, the word ‘career’ also means to swerve about wildly. There is a nice dichotomy...
here that reflects the tensions felt by many in the world of work today. The point I am making is to acknowledge that words are important and that our experience of the world and career, is shaped by language which cannot be separated from context.

In the attempt to understand what we mean by ‘career’, or indeed the future of work, differences should be considered, as ‘career learning’ does not take place in a politically neutral context. As Ronald Sultana (2011) has pointed out, the success of any service dedicated to supporting individuals as they develop a career is largely dependent on the cultural, historical and policy context in which that service operates. To many, livelihood, the getting of one’s daily bread, does not evoke notions of profession, vocation or career - the word ‘career’ then may have ‘middle class’ and Western connotations that have little or no relevance to the material condition of others’ lives. This is not to impute that ‘livelihood’ is a negative term, for example Gideon Arulmani, a colleague from India, does not assume that ‘career’ in the Western sense is necessarily a representation of progress and self-fulfilment. He tells the story of a young fisherman in the Maldives, where Gideon was contracted to set up a youth employment service. The young fisherman said to him, “Why do I need to think about what you call ‘career’ when there are plenty of fish in the sea?” And we should not assume that livelihood in these circumstances is disconnected from the modern world, technology may be used to sell and export the catch.

‘Careers work’ then is learning work and not simply about helping people to make decisions about future work, as it involves considering education and training options, work opportunities, career development within work and managing redundancy and unemployment or underemployment. It can encompass disengagement with the world of work at the end of a career span. It also includes helping people to cope with disappointment, the management of work relationships and concerns around ‘work-life balance’.

Careers work must also engage with the rhetoric around employability skills, resilience and adaptability. Whilst many of these tensions derive from external political and economic forces, the effects are felt by the individual when work is difficult to find. As Ken Roberts, a UK sociologist, has often stressed, employment opportunities remain structured by the society within which individuals live, albeit that individuals, to varying degrees, have the ability to act upon the world – to be ‘agentic’. Career learning interventions then should pay attention to the prevailing ‘local’ discourses about the future of work. In other words, the practitioner will be mindful of the individualistic rhetoric that surrounds much careers learning work today.

**DEFINITIONS**

There are a number of definitions that can be found in the literature and some of them are very long in the attempt to be all-embracing. Collin and Young suggest:
In the abstract, as a concept, career can refer to the individual’s movement through time and space. It can also focus on the intersection of individual biography and social structures... [it can] refer to the patterns and sequences of occupations and positions occupied by people across their working lives.

(Collin & Young, 2000:3 – my emphasis)

The current experience of work is more fluid, with the notion of a linear career trajectory seeming outdated. Indeed, Mark Savickas states, ‘The “dejobing” or “jobless work” that has accompanied the digital revolution changes long-term employment into short-term projects, making it increasingly difficult to comprehend careers with theories that emphasize stability rather than mobility’ (2011:3). Short term projects can be viewed as exciting or they can engender anxiety when everything is fluid, with no place for permanence. Outdated or if you prefer, established theories, view the individual as somewhat fixed, matching personality traits to job factors whereas the development of a career biography is always influenced, aided and/or constrained, by context.

BUT WHAT ABOUT THIS WORD ‘PROJECT’ IN TERMS OF CAREER?

The word has the sheen of something planned suggesting a thoughtful, time infused approach to career decision-making. That is the ideal, but is it likely to be an assumption and not the reality for many? Again, does this idea of ‘project’ resonate with the critique that career development learning is a middle class activity, but shouldn’t everyone have access to this? Linking class to wealth, Sen (2010) discusses how poverty, and the resulting inequality, violates the norm of equality of capability to function fully as a human being. Inequality breaches the rights of freedom to choose one’s life path and the resources to pursue it (Nussbaum, 2011). If there is no access to financial freedom, then the focus is on a struggle to survive.

And yet is this the same everywhere? We need to beware generalisations? Movement towards an idea of what might be a meaningful career project or educational choice – can change the vision of what is ideal. Gadamer’s phrase (1997) that ‘horizons shift for people on the move’ is telling in this regard. So, as always the answer seems to be, ‘it depends’.

Although the self-realization concept outlined by Maslow (1970) then may be out of date, the individualistic ethos persists, particularly in the West. The idea that we can all make it if we have a career plan or project, can cover up the radically uneven distribution of the chances of some kind of self-realization when life problems are socially generated. And new technology within a global market, marvellous though it can be, can also render the highly skilled - unskilled and unemployed. Most people want to work, but hope can be squeezed out of them, particularly when a job, any job, does not pay enough to cover all the bills.
So before we all get too depressed, shrug our shoulders, give up and go home, what part can narrative careers work and career learning play within a desire for social justice and inclusion, to work towards increasing the opportunities for all in society to ‘choose one’s life path’? I promise I will come to this, but I haven’t finished with the dark side yet.

A LIQUID WORLD

We can experience a paradox of living in a capitalist world – in the West we benefit from it and often disapprove of it at the same time. Bauman (in Bauman & Raud, 2015) challenges us by asking when we are this affluent, who’s going to go out there and fight for the less affluent? Paulo Friere argued long ago of course that we are all responsible for the world we live in and the fate of those less fortunate. As we move to modern thought from preordained fate, to the language of achievement, (education being the contemporary solution) we can get lost in a hall of mirrors worrying about what phrase to use: post-modernity, late modernity, second modernity or, to use Bauman’s term (2006), liquid modernity.

At the core of careers work however we recognise the effects of deregulation, limited resources, funding cuts and calls for flexibility. Also, the difficulty in creating the balance, on the one hand, between the ‘needs’ of the social system and the economy and, on the other hand, the post-modern life course – involving unanticipated job loss, where life paths are less predictable than in the past. This gives rise to the compulsion to make career decisions on a continual basis, to make sense of current situations and to adapt to changes – and the responsibility of making this happen is often devolved to individuals. That sense making is what Archer (2012) refers to as a ‘reflexive imperative’, in order to make sense of self and our place in a changing world where the future of work is uncertain.

Uncertainty in such a world may be our fate – we can view this as a modern dis-ease or part of our glory – it leads to inventiveness, creativity and our capacity to transcend the limits of human potential. The future is not given and we live in a world of continuous contradictions, where we use the language of becoming not being. In terms of career this is not because we do not know enough, we are awash with instant information, but uncertainty rules because of the complexity of human lives in context and the struggle to think about how the information relates to us as individuals, but also to us as persons in communities.

PSYCHOSOCIAL AND TRANSTHEORETICAL

In a post-modern view of the world (at least in the West) the expectation of biographical trajectories based on a fixed sequence of school/work/retirement is, largely, no longer tenable within employment markets that are unstable and unpredictable. For career
theory and practice it is claimed there is a need for a paradigm shift in how we think about career and careers work.

In terms of theory, careers work has drawn on psychology and in the UK in particular, sociology alongside some use of economics. The approach might be described as transtheoretical and in work with my colleague Linden West; we have called for psychosocial approaches in career counselling (as does Jean Guichard). The term has a certain ‘it does what it says on the tin’ appeal, but is nicely exemplified by this quote from C. Wright Mills:

> Know that the human meaning of public issues must be revealed by relating them to personal troubles and to the problems of individual life (1970: 247/8).

We are born into a specific time, place and social position, predetermined by parentage – this is not negotiable. Thus the term psychosocial recognises both external and internal influences and the interplay of both. David Levine states that the potential to live a life not yet determined, might define agency. The role of career counselling is to work alongside the individual to explore that potential, even when the potential for action seems limited.

So, our selfhood, our life narrative, plays a fundamental part in our human motivation – in learning, in work and in our social lives. In this sense we are always a project of becoming – which can be both liberating and perturbing. We function within numerous boundaries, within and outside of our bodies and in the various contexts in which we operate. In terms of multiple selves, we often present a ‘face’ in social encounters with others, as Goffman described. We can experience this as separation in our relationship to work and family. But beyond these ideas of a fragmented self, we do have a sense of a whole, we have ideas about who we are and what is important to us in life, and if possible – in a career.

**FOR EXAMPLE, WHAT DO WE SEE WHEN WE LOOK AT A PHOTO OF OURSELVES WHEN YOUNG?**

And what has this got to do with career learning, selfhood and narrative when thinking about future choices? Career and selfhood are brought together and taken apart in social practice via interactions with our ‘selves’ and with others, through time and between cultures. Since Freud and Nietzsche, Western thought has long abandoned the idea of a single self-contained individual. There is no essential human nature – we are who we are just now in our present circumstances, but our past experience is with us in that present. And we still seek this coherence – we want meaningful lives – the thought of the opposite (that existential problem) can be unbearable. It is our own mortality that drives culture, human history and how we live our lives and undertake our work, in the
broaderest sense (and perhaps that is the meaning of ‘life project’ or ‘life design’). Work is our chance of increasing the quality of our existence. But this is a Western view of course; the starting point in many Eastern religions is different and career theorists could learn much if we listened more to alternative views; we could gain greater compassion – wisdom even.

In terms of selfhood, Mark Smith, suggests (1996/2001) that ‘...this awareness when extended over time, (looking backwards and forwards) then becomes known as the ‘autobiographical self’ that we tend to experience as central to our understanding of who we are. At any one time, then, we are aware of the here and now ... and of its place in relation to our history’. My argument is that career counselling, using biographical, narrative and reflexive approaches, can support individuals as they look backwards and forwards to construct their educational and/or career biography... as they engage in career learning.

I want to linger on the term biographicity. Peter Alheit argues that biographicity (1995) is the capacity to compose a biography – a life story if you will. This is a survival necessity in a more individualistic, neo-liberal, paradoxical and perpetually changing, liquid world. The paradox being how to adapt, change, connect, to live more autonomous lives where the cult of the individual conflicts with the need for a sustainable world. Alheit’s concept of biographicity has been used by Savickas in thinking about how individuals construct a career future. Biographicity then can be thought of as the reflexive processes by which individuals reflect on new, and sometimes troubling, experiences, rethinking and absorbing them into their life/career story. Constructivist approaches (if I use that as an umbrella term) for career counselling view the practitioner as someone who works ‘alongside a client, to explore their life themes in order to build biographicity’ (Reid, 2016: 106).

Career counselling from this perspective is not about a ‘one-size-fits-all’, ‘ticking boxes’ and a reliance on a ‘what works’ agenda. This more nuanced approach requires more, not less education and training for reflexive career practitioners.

MOVING TOWARDS NARRATIVE

All very interesting I hear you murmur, but out there in the ‘real world’ – what might make a difference? Compared with the need to secure the survival of services, theory and research underpinning practice is always at risk of being marginalized – so where is the space for practising with new approaches? And I am not advocating innovation for the sake of it, on the assumption that it must be a good thing. Innovation is a thrusting, business word and we need to keep a critical eye on the language we use. And, innovation in terms of what is judged successful and good is always decided in retrospect.

Returning to place, how an individual develops a career biography, or is constrained in
the attempt, takes place in a social context, constructed with others. The employment market for many young people across Europe in particular, is dismal and a discourse of ‘what they need is to be taught resilience’ feeds that neo-liberal idea that we can all make it if we just try hard enough, and if we fail then it is our individual responsibility or fault. And it leads also to a litany of lacks and needs in our approaches to working with clients – where we resort to shorthand labels: such as NEETS (not in education, employment or training) as such young people are labelled (that’s the UK’s gift to the world – that essentialising label).

At points of transition, turning points, individuals, whatever their age, may question and be troubled by perceptions of what constitutes their sense of who they are: biographies can get disrupted or simply squashed by external events and expectations. And I want to say something further about culture here. I would never assume that Western models of learning, teaching and in this case careers work, can be imported elsewhere or indeed imposed on people arriving in a country, wherever that may be, particularly in the current circumstances in Europe when refugees and migrants do not ‘share’ (for good or ill) a colonial past with their ‘host’ country.

For me, this underlines the fundamental importance of addressing how patterns of socialization and family interaction within different cultures, affect people’s self-conception and their way of placing themselves in the world: their biographicity. It is simply not possible to impose individualistic models of ‘helping’ (whatever educational or helping service is offered) onto others whose experience can be described as collectivist (i.e. the family or community decide, not the individual). Western and ‘classed’ models of thought simply will not work in many situations. Understanding can only be gained by attempting to enter different cultural systems of thought – by paying attention to the stories people tell. As said previously, storytelling is universal but creating the circumstances for individuals to tell their meaningful stories requires rapport building and in some cases, what Arulmani refers to as a recognition of ‘cultural preparedness’. This is not to suggest that a practitioner must be prepared to know about all/ any cultural difference they may be working with, but an understanding that the client is culturally prepared via enculturation and acculturation processes. Thus, I cannot assume that a constructivist approach, based on the premise that the client is comfortable to sit and talk about themselves, or is happy to make decisions without consultation with their family - will always work, any place, any time.

MOVING ON, THE PARADIGM SHIFT VIEWED AS NECESSARY FOR CAREERS WORK

This has been written about by a group of North American and European scholars and taken forward into theory and practice in other countries in the southern hemisphere. The work is led by Mark Savickas, (Savickas et al, 2009) using the term ‘life-design’ – and
that term is not universally loved or accepted. But, it aims to highlight the inseparable nature of life and career within political and economic precepts around the goals of competitiveness in employment. At its heart this shift is asking career practitioners to slow down a bit, take care, be reflexive and listen more to what the individual views as meaningful. It’s an old argument but education (and career learning) coupled solely to job qualifications can only serve the needs of the system – which leads to a one dimensional view of the world. Marcuse demonstrated how power and hegemonic processes shape our drives and the ‘obvious’ need to comply with the system. In careers work, and not just in careers work, this leads to instrumentalism, ‘busyness’ and the ability to perform, to act, to meet targets.

BEYOND THEORY - HOW CAN NARRATIVE ‘CAREERS WORK’ STRENGTHEN THE OPPORTUNITIES FOR BIOGRAPHICAL PLANNING?

In the careers world, and elsewhere, policy makers and practitioners want clear uncluttered advice, i.e. ‘tell me how to do it so I can just get on with the job’ – a powerful discourse that if not challenged shuts down the problem. But this cannot just be about technical ‘know how’ – that leads us back to the instrumentalist imposition of a ‘what works’ agenda. And there are many who are exploring this in the wake of feminism, post-colonial research and the critical theorists, with a focus on what both oppresses and liberates people’s potential. Colleagues in the UK and elsewhere are questioning the demands for certitude, measurement and generalisability, calling for more sensitive, differentiated and nuanced approaches to understanding lives - and learning - and careers.

But what happens on the ground where the previous order and stability are contrasted with fluctuation, instability and multiple choices (although how multiple those choices are for many I have already questioned)? So for clients, where is the agency – the ability to act – is it all hopeless? As Bourdieu told us, our habitus shows us the limits of our social origins, but there is another side to this macro view – we/clients/ students do have a sense of self – we have the sense that we can act upon the world – that we have potential, that there are possibilities. This, I am saying, can be achieved through conversation with a suitably trained and qualified professional using narrative approaches. Articulating the important patterns and themes in a life is difficult on one’s own. ‘Conversation’ in the Latin means ‘wandering together with’ – career counselling provides that space for such wandering, where values and interests can be articulated – said out loud. Exploring an individual’s biographical knowledge can be a resource, a vehicle for change in communication and interaction with a career counsellor. It can take the individual beyond their prescriptive knowledge of what might be possible. As a truly interactive approach they get to hear their own advice to themselves - and this is not age restricted (as is often thought), young people can do this too.
USEFULNESS AND TRUTHFULNESS

I want to repeat here, whatever the model for career learning used, we need to be wary of importing ‘what works’ in one context to another. The model and the language/phrases employed need to be adapted to fit particular cultural settings, whilst retaining the focus on the subjective rather than the objective measurement and matching of traits and job factors. When presenting the model in countries outside of the UK, it has been important to consider how to build trust and rapport ‘locally’, in order to engage clients in a different approach to talking about their educational and career planning. For example:

In Sweden the opening line of ‘how can I be useful to you as you construct your career’ was seen as unhelpful. To the career counsellors in Sweden asking ‘how can I be useful’ suggested that the practitioner would be doing all the work – they had to find a different phrase, which fitted with their approach to collaborating with the client.

In Ireland, practitioners were working with vulnerable adults, often with traumatic stories from childhood. The building of trust and rapport was always vital, but the need for a clear explanation of why early recollections were part of the approach was paramount.

In Slovenia I decided to use a live demonstration as a video would not have been useful as an example alongside the need for simultaneous translation. The model worked well, but the difficulty was getting volunteers to be the client, or one of two observers to join in the feedback. In the UK if you do not want to volunteer, you do not make eye contact but look at your shoes. In Slovenia they remained silent and looked me straight in the eye. But I have counselling skills and am comfortable with silence – I did get volunteers in both workshops eventually!

In India, during a training session on reflexivity in careers work, I was aware that when using a narrative exercise I should avoid asking for reflections on names in order to think about a life story – as names often indicate social position.

So, the model needs adaptation. Of course, trust and rapport are vital at the start of any careers interview, particularly if clients are not used to talking about themselves. Many young people in the UK will not engage and talk about themselves, particularly if they think they are going to be told what to do (and this may be their usual experience). When the answer to a question is ‘I don’t know’, they probably do know, they just do not trust the practitioner enough to tell them. The questions used in narrative work are however ‘playful’, not difficult and not intrusive. They provide an indirect way of talking about self and interests, but also pay attention to what is meaningful for the person, in their family and community. The interviews are dialogical, nuanced with very little career guidance in the traditional sense, but they provide a space where clients can ‘hear their own advice to self’.
THE NARRATIVE CAREER COUNSELLING MODEL

There is no time to explain the narrative model in depth (derived from the work of Savickas), so I have used material in projects with practitioners and directly with clients in research undertaken in the last six years. As you can see it fits within a 3 stage beginning, middle and end framework.

The six favourite questions can be useful on their own: The model draws on the important and positive themes in a participant’s life in context. Briefly, the model involves six initial exploratory questions around role models, favourite books and media, hobbies and interests, and finding a motto or favourite saying or cultural proverb that can sum up an approach to life. These are not difficult questions but are more interesting and engaging than the ‘standard’ career interview questions. They are asking the client to talk about themselves and their interests but using an alternative (indirect) route, rather than an invitation to ‘tell me all about yourself’. Taking this approach, the client is talking about their pre-occupations about self and important life scripts and motivators.

The model also looks for strengths in the stories that clients tell when they recall events and it helps them to think about their interests from a different point of view – new perspectives on what might be possible can be opened up. In the learning about self, through the narrative career learning process, they can identify the resources that are available to them, the people that can help. The learning about self in terms of career development can be transformative.

Early recollections: Within a 50-minute interview, after the initial questions, the exploration continues, then, by visiting early recollections from childhood to teenage years, to help the client to search for significant patterns and themes. To be clear, this is not ‘tell me all about your childhood’. The stories that come to mind are the messages the client needs to hear at that point in time – they are a rehearsal, if you like, to identify the resources they have for the current situation or career problem.

The approach is playful, but serious, and there is usually laughter, alongside some deep thinking: thinking which is maintained after the interview as the client continues to reflect and often to talk with others, friends and family. Through the feedback process in the interview (and this is not about the practitioner interpreting the material) the client listens and looks for the patterns– the patterns in their responses that are summarised and fed back to them. This helps them to decide on the themes that are meaningful to them, linking these to potential future goals and action. It is the first stage, after which there is a period of reflection and, in many cases, this includes a discussion with others - before a move to action.

Follow up: A follow up interview would be the norm, a second interview is desirable, but within time limitations, in my case, this is via digital technology, i.e. questions via an email exchange. The tentative choices that are made are not imposed on the client – it will be the client (often with the family) that decides what will work, what is possible for
them in their circumstances. The desire of the practitioner to raise aspirations has to be balanced with an understanding of what is possible for a particular client in specific situations. The model or even parts of the model are useful for those for whom a matching approach is not helpful and it can be used, piecemeal, in shorter interviews.

There are many alternative approaches under the banner of constructivist career counselling. I am not suggesting this is the one and only model to use. However, whatever the method used, in whatever situation where individuals are invited to talk about their education or career future – we should never underestimate the power of being listened to by an attentive other.

WHAT IS THE LEARNING FROM THE RESEARCH INTO NARRATIVE 1-1 INTERVIEWS?

Research with practitioners using narrative career counselling has received positive feedback, albeit practitioners did not use it all the time with all clients. Yet, in the UK, it was clear that time to practise a new approach, any new approach, was not readily available in state funded services.

In my research working directly with clients in two separate projects, younger adults, aged 17 -19, were not used to recounting stories from their lives - their ‘normal’ experience was to work with lists of job factors or to focus on their lack of qualifications. Older adults also found the approach different, sometimes challenging, but engaging when busy lives and the need to support and consider others had constrained thoughts about future career development.

WORKING WITH CLIENTS

I have said that narrative career counselling has the potential to be transformational – a word that is used indiscriminately so that it gets emptied out of its meaning – but this seemed to be the case for Vee, Robert, Jay, Mark, Angela and Susan (discussed in the presentation). The interaction, in varying degrees, transformed their view of self and the possibilities for their future direction.

CAREER LEARNING AND FUTURE OF WORK.

The future of work does seem uncertain and we have to live with that uncertainty, aware of a need to adapt to changing circumstances, whether we are a client or a learner; a practitioner or a teacher. Savickas, drawing on Adler, states that in a career we try to ‘actively master what we have passively suffered’. Narrative career counselling provides a space to discover our preoccupations – most of us talk about wanting to make a difference, to have a meaningful career. That opportunity may not be available
to everyone, but the discovery may still be important. For example, a client may not have
the qualifications to become a vet, but discovering their preoccupations they could be
the knowledgeable person in the domestic pet store that everyone comes to for help.
Statistical information can tell us about educational transitions, training engagement or
employment rates. However, we cannot measure the effectiveness of career learning
via tests and scientific, objective criteria. After all, life as lived is subjective; so part of my
argument here is asking us to find time in our practice, whatever our practice is, to pay
attention to the small things in order to fathom what is meaningful, monumental even, to
the individual. This is taking us back to the connectedness of the parts and the whole in
a life and a career, and our interdependence with others and the world in which we live.

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How does the workplace look different than it did during your youth? How does career success require new skills for a workplace shaped by technology, labour cost equalization, demographic and longevity trends? How are learning efforts connected to internal motivation, natural aptitudes, and opportunities for growth and professional development? How are adults embracing changing notions of jobs, definitions of work, and employment’s impact on their identity (Morgan, 2014)? These questions drive the need for adopting career development as an important key to bridging the academic and career functions in Industries of the Future (Ross, 2016). A workplace now demands the ability to identify emerging talent based on real performance of aptitudes, motivation to remain curious, and worker engagement connected to finding new ways to add value. As career development builds bridges to answer these questions, educators and governments will more efficiently be able to connect labour supply and demand.

Career guidance, adult training, and talent management are undergoing transformation worldwide. Each is often seen as the responsibility of different sectors provided to different age and skill-level groups. Now they are becoming a requirement for doing business in the local and global marketplace. All three demand public and business partnerships if adults are to truly embrace lifelong learning, realistic expectations about change, and the need to remain skill relevant as the use of data shapes sustainable work options. Investing in career development as Singapore is doing within programs like SkillsFuture (http://www.ssg-wsg.gov.sg/) can help to bridge learning and career functions.

For countries to compete in the war on talent, employee skills must be developed more rapidly, less expensively, and with deeper connection to a worker’s internal motivation. Workers seek programs when they see the value of becoming more agile within flatted corporate hierarchies and uncharted career paths. A career development lens, new to many adults, offers the bridge to connecting lifelong learning to new possibilities.

CAREER DEVELOPMENT BECOMES THE ESSENTIAL ADULT BRIDGING ACTIVITY

Shifting the focus of career development beyond youth, age specific events, and graduate “destination rates” is essential to building a country’s talent pipeline. “Career readiness has no definite endpoint. To be career ready requires adaptability and a
commitment to lifelong learning” (Career Readiness Partnership Council, 2012). Life design theory, narrative practices, and understanding changes in learning, work and aging have coalesced to emphasize career development competencies for a lifetime of transitions. Internal motivation is the new fuel to identifying and maximizing the horsepower of a learner’s natural aptitudes.

Policy makers see career development as aligning curriculum with expectations to raise test scores. Employers hope career development will meet workforce needs and create middle class jobs, and parents seek assurance that students will qualify for name-brand colleges and livable-wage employment. Adults in transition hope career development will direct them to better jobs, higher levels of responsibilities, and opportunities to plan for post-work.

Historically, career development has focused on college admissions and financial aid, career pathways, and navigating the college admission process. Yet “the increased focus on college and career readiness, combined with the complexity of the challenges associated with the topic, have led to a rapidly expanding college and career readiness community, rich with resources yet replete with confusion” (College and Career Readiness and Success Center, 2012). Investing in career development as Singapore is doing within programs like SkillsFuture http://www.ssg-wsg.gov.sg/ can reduce the confusion and will succeed as it bridges learning and career functions.

**CHALLENGES TO DEFINING AND UNDERSTANDING READINESS AND CAREER DEVELOPMENT**

Readiness for change and embracing career development is complex. Untrained in career development, educational administrators often define readiness as preparedness for college and job placement. However, professional career counselors and specialists define the true measure of success as stimulating learners’ self-awareness and encouraging intentional exploration for designing meaningful lives of which work is a very large part.

We know that for all learners (especially youth), self-awareness and clarification precede curiosity. And curiosity is imperative to exploring learning and career options for any age. With curiosity, college and career advice, career information, and career and employment fairs become more than “information dumps” into resistant or inflexible minds. Without curiosity and self-awareness, learners are more vulnerable to peer pressure, external rewards, and less able to find “best fits” between interests and natural aptitudes.

**READINESS TO EXPLORE “BEST FITS”**

Understanding oneself, learning and work options, and one’s fit is challenged by gender-based circumscription of aspirations, career decision-making readiness, and school to school or school to work transitions (Turner & Lapan, 2013). These issues shape the quality of “making meaning” from experience, informal feedback, and
career assessments. Non-scientific assessments can fail to generate educational and occupational options for exploration, especially important to clients with limited work knowledge (Metz & Jones, 2013).

Substandard work performance due to mismatched abilities raises the importance of matching abilities with ability requirements of jobs (Swanson and Schneider, 2013). As research has shown, regardless of age, learners aware of their interests and natural aptitudes are more likely to find their FIT. Figure 1. Best FIT Model (Feller, 2014) illustrates the relationship among self-awareness, interests, and aptitudes.

**Figure 1. Best FIT Model**

Moreover, the Best FIT Model correlates strongly with focused learning, and greater ease in college and career transitions.

The YouScience (www.youscience.com) program uniquely measures eleven aptitude-driven “brain games” to reveal natural abilities in skills needed for high-demand careers. “FIT” levels encourage successful blending of personal interests and aptitudes in college and career choices regardless of age. Personalized Strong-Fit/Good-Fit recommendations are offered about “hard-wired potential” to excel and learn quickly within over 500 livable wage jobs through a proprietary algorithm.

In-depth information on each career including a day-in-the life, core job tasks, salaries and educational requirements are provided. It blends personal aptitude and interests data with over 2300 major-to-career matches to present a broad array of recommendations as jumping off point rather than a prescriptive answer. Each assessment exercise takes 5-8 minutes to complete 16 different exercises of which 11 are required and 5 are optional. Whether considering a career change, reentering the workforce, working with teams, starting a business, selecting avocations, or volunteer activities, profiles provide
real information based on career science to encourage movement forward.

Comprehensive insights on how aptitudes impact work, learning, and social life, and tips for improving performance are offered. Self-advocacy language designed to communicate unique assets on resumes; job interviews, job applications and college essays are provided. Online access to results is provided for 10 years. YouScience has conducted extensive research and profiles are based on over 40 years of research in dimensions proven to be effective in being successful at work.

Within an economy increasingly unable to create enough jobs to match aspirations, employees struggle to achieve their best FIT. This is evident by relatively high under/unemployment rates, increased frequency of ineffective adult career transitions. Retirement and encore careers lacking a sense of how to connect one’s aptitudes and interests often lack the power of connecting internal motivation to future possibilities. Economic pressures often lead to early foreclosure on potentially less fulfilling career choices. Connecting learners’ self-concept to a meaningful life of purpose early is important, particularly as evidence shows that effective career interventions allow learners to proactively manage career transitions (Whiston & Blustein, 2013).

A YOUTH FOCUSED CAREER DEVELOPMENT LENS IS SHORT SIGHTED

Career development is best started in early childhood (see www.missouricareereducation.org/project/guidelsn/cd1), and the goal of making high school matter (Stone & Lewis, 2012) is essential. Yet, career development practice reminds career professionals that navigating career change spans the lifetime. An approach that goes beyond interest-centric tools for traditionally aged students, and acknowledges workplace change and global demographic shifts is necessary for learners to navigate a life of college (learning) and career (transitions).

As “students” face career decisions, the college ‘prep’ track and career and technical education (CTE) duality remains unfortunately tenacious, and liberal arts or job preparation advocates remain steadfast to their chosen “sides.” As career development professionals, the question of obtaining a liberal arts education versus more specific job preparation needs to be viewed not as a “better or worse” choice, but rather as “equally important” options. The increasing number of four-year post-secondary graduates returning to technical and certificate programs as “reverse transfers” confirms this point.

Learners are best served when “college” is universally replaced by the language of “post-secondary education”. College is a place, whereas post-secondary is a continuous kind of learning that needs to remain attractive for reluctant adults who still believe their company will provide tenure, security and skills needed to add value. The disruptive nature of work worldwide has mandated that workers play a much more engaged role in managing their careers.
CAREER DEVELOPMENT NEEDED FOR ALL REGARDLESS OF AGE

Today, all workers no matter the age need to embrace lifelong learning, pursue self-understanding (see www.personalitydimensions.ca), and harvest psychological capital to thrive in a world of No Ordinary Disruption (Dobbs, Manyika & Woetzel, 2015) or The Next America (Taylor, 2014). In essence, we all need to be in a continual state of readiness for change. Gratton and Scott’s The 100-Year Life: Living and Working in an Age of Longevity (2016) highlights the need to structure one’s life in completely new ways.

The boundaries of work, learning and play are blurred. Technology increases information access (see www.cdminternet.com) that is readily assimilated into younger lives, leaving less tech savvy family members behind. With smartphone in hand and ever-present email, differentiating work from learning or play is difficult. The home office and workplace increasingly cross. Relatively secure, stable 8 to 5 jobs, overtime and wages that increase with age are no longer the norm. Moving up the career ladder is a less frequent route to social mobility. Wealth and class distinctions are more bifurcated across neighborhoods, and careers are rarely separately boxed into timeframes of education, then work, then retirement. The need for career development looks very different from my high school and college days when it focused on youth, at one point in time, as learners decided their post high school or college plans.

FREQUENT AND COMPLEX ADULT TRANSITIONS

In addition to the multitude of life and career transitions of youth, the same navigation and uncertainty exists for adult learners regardless of age (see www.lifereimagined.org), title or income. Each life stage brings new questions about self-understanding and readiness for intentional exploration about “what’s next”. Asking “what’s next” is normal for the underemployed, the unemployed, and the “don’t need to work for pay” sectors. Without continuous learning and a sense of purpose from paid or unpaid work, transitions leave individuals with “career pain” often described as a hollowness or sense of being irrelevant and invisible. The middle-aged learner and career-changer often experiences more stress, and an extended work life because of financial insecurity or workplace change. Aging is increasingly less determined by chronological age than by markers of failed health (e.g., loss of mobility), requiring many adults to reimagine their life through a series of choices, acts of courage, and a necessity to expand their curiosity.

Aging populations in many countries further accentuate that learning and work transitions are not a one-time event. Career development programs targeting only youth at one point in time leave many adults and 50% of urban students (in the US) of color and poverty who drop out of schools unserved (Dobo, 2014). As adult educators, career counselors and specialists, it is critical to understand that readiness for change precedes ALL learning transitions.
READINESS TO DESIGN A LIFE IN A WORLD RE-DESIGNING WORK

With increased frequency, youth and adults understand that work is a critical component of a well-designed, meaningful life. Designing a life employs three psychological tenets of individual differences, lifespan development, and narrative. Savickas’ (2012) work has generated international leadership and offers an approach for learners to fit work into their life design. Tools that help clarify life priorities and support narrative storytelling to create readiness include:

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<tr>
<th>Help Clarify Life Priorities</th>
<th>Narrative Storytelling to Create Readiness</th>
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<tbody>
<tr>
<td>• Narrative approaches including:</td>
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<tr>
<td>- Life Lines</td>
<td>• Hope Centered Model of Career Development (Niles, 2011)</td>
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<tr>
<td>- Knowdell Card Sorts</td>
<td>• Centerpoint Institute- <a href="http://www.centerpointonline.org">www.centerpointonline.org</a></td>
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<tr>
<td>- Elbow to Elbow Resume Development</td>
<td>• Colozzi's re-framing “career to care” (2014)</td>
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<td>- Life Role analysis</td>
<td>• Who You Are Matters! boardgame (<a href="http://www.onelifetools.com">www.onelifetools.com</a>)</td>
</tr>
<tr>
<td>- Career Genograms</td>
<td>• Franklin &amp; Feller 2016</td>
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<tr>
<td>• Life Reimagined - <a href="http://www.lifereimagined.org">www.lifereimagined.org</a></td>
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Additionally, Franklin’s (2011) holistic, narrative framework and method of practice for career counseling illustrated in Figure 2 proposes two main processes (1) career and life clarification and (2) intentional exploration. Using a written Career Statement that comes from playing the Who You Are Matters! board game and on-line storyteller tool (see www.onelifetools.com) helps clients prepare for intentional exploration, minimizing premature and ill-informed choice making. This method has helped individuals in “career pain” experience statistically significant increases in six key measures—hope, optimism, confidence, resilience, curiosity and exploration, and personal growth (Franklin, M. & Feller, R. (2017), Franklin, M., Yanar, B., Feller, R. (2015) and Franklin, M., Feller, R. & Yanar, B. (2015).
DEFINING “CAREER” FOR A NEW ERA

Jobs provide structure, relationships, and opportunities for finding purpose. Providing career development that empowers learners to be the expert in their own story means understanding that careers are much more than jobs. Franklin’s respect of life’s natural evolution is found within his definition of career, “The full expression of who you are and how you want to be in the world, which keeps on expanding as it naturally goes through cycles of stability and change” (2014). This observation and those that follow acknowledge the changing context of learning, work and aging.

ACKNOWLEDGING THE CONTEXT OF A NEW ERA

High school-only is connected to low wages and high unemployment...

In a skills-based and knowledge nomad (Feller & Whichard, 2005) rewarded economy, young adults with only a high school education suffer from low wages and high unemployment to a greater extent than their counterparts one and two generations ago (ACT, 2014). Steppingstone jobs are held longer by better-educated more experienced workers as fewer next tier jobs exist. Global business practices, automation and robots devalue manual, routine and low skilled labor. Technical program graduates are often the few high school-only students able to find rewarding entry-level employment.
The value of the college experience is increasingly questioned...

College Unbound (Selingo, 2013) and Academically Adrift (Arum & Roksa, 2010) challenge assumptions about the college experience’s value. “Americans have clearly made up their minds about the importance of colleges in preparing students to get good jobs, but measurements of this outcome are murky at best and nonexistent at worst” (Busteed, 2014). When hiring, business leaders say a candidate’s knowledge in the field and applied skills are more important factors than college attended or major (Gallup, 2014).

College debt is increasingly punitive...

Recent college graduates are entering adulthood with record levels of student debt with two-thirds of recent bachelor’s degree holders holding an average debt of about $27,000. Two decades ago, only half of recent graduates had college debt, and the average was $15,000 (Pew, 2014). Over the past decade, the annual rise in tuition, fees, room and board at public four-year schools has been 3.3%, even after adjusting for inflation (College Board, 2014). Governments across the globe are looking for more efficient ways to educate their college bound talent.

More education fails to guarantee work performance...

In the present (and I expect future) workplace, higher levels of education fail to guarantee higher work readiness. Attaining the required education level doesn’t necessarily equip individuals with the skills needed for successful job performance (ACT, 2014). Technological changes cause the relative price of skills to change and the market adjusts by paying for skills more than educational pedigree. Uncomfortable as it might be, four-year college degrees may not provide the security or mobility often professed. Even liberal arts proponents argue for marketable skills (Burning Glass, 2013), and STEM graduates are discovering that precise specializations have short shelf lives.

Career and technical education upgrades holds potential for all learners...

All learning pathways to career roles in demand deserve equal priority and respect (Jarvis, 2013). More relevant, academic and challenging career and technical education (CTE), with strong employer partnerships, and access to expensive high technology produces strong middle skill workers. Growing numbers of “reverse transfer” college graduates have come to understand that making the most of new technologies increases prospects. Since non-technical college grads don’t replace technical workers but rather replace service and retail workers with less education, CTE is increasingly valued by the unemployed and underemployed college graduates. With 27% of people with certificates and 31% of people with AA degrees earning more than the average BA graduate in the US (Carnavale, 2011), the market power of CTE garners attention.
Growing impatience about skill and innovation gaps...

Critical high value added skills tied to wealth creation and innovation within local economies are increasingly in demand. Uneven talent distribution worldwide is forcing communities and employers to develop innovative ways to find employees, develop internal capabilities, share expertise about promising career development practices, and create regional talent networks.

Livable wages, lifelong learning, and self-understanding are ageless goals...

Aging is more recently understood as learning to live rather than to age, and that the roles of learning and work are inseparable from personal relevancy, meaning and purpose. To achieve learning and career readiness over a lifetime, continually upgrading skills is essential. Although job skills can be acquired through various means (which may include a postsecondary degree), preparatory programs must increasingly offer the necessary skills for specific jobs throughout a career. The notion of micro-colleges, boot camps, badging, microskills, and certifications bring pressure to the traditional higher education industry.

Basic academic, lifelong learning, and self-understanding skills are as important as occupation-specific skills during transitions. While job-specific skills are essential for livable wage employment, relevancy and meaning from unpaid but purpose-based activities are critical as well. Purpose research (Strecher, 2013) demonstrates that learning has been found to correlate with health-related factors including Alzheimer’s, mortality, suicide, weight loss and more. Beyond paid work, remaining relevant demands lifelong learning and making purpose-based commitments regardless of age.

A new phase of aging demands readiness too...

Baby Boomers benefit from the incredible longevity dividend shared across the world. Many are re-evaluating options about leaving paid work, creating the good life (O’Toole, 2005), and seeing aging as getting a “second wind” (Thomas, 2014) to remain highly engaged within society. Many extend their work life for financial reasons or professional satisfaction. With more than 10,000 Baby Boomers retiring in the US each day, most are not as well prepared financially as hoped. This global trend is evident within countries with an aging population, limited innovation or high dependence on imported natural resources. Returning to post-secondary or some form of lifelong learning is an increasingly important option to finding work and exploring unpaid but purposeful work opportunities. Maintaining purpose, relevance, and connection is foundational to a life reimagined (Leider & Webber, 2013).
Success needs to be defined as having a HEROIC mindset...

Futurists suggest that a majority of future jobs don’t yet exist. Within this context (Feller, 2016) proposes a need for a HEROIC mindset. This set of skills supports the ability to find direction during change while living on purpose. By abiding to the guidelines of a HEROIC methodology learners can draw upon their psychological capital to move forward with clarity. As careers undergo cycles of instability and change a HEROIC career mindset includes six elements:

*Hope (H)* occurs not only in difficult moments but also as a thinking process to actively pursue goals. It brings together “will” (a sense of investment and energy), and “way” (the resources used to generate viable avenues or pathways to finding purpose in work).

*Self-Efficacy (E)* is a learner’s sense of “I can” where they trust their own ability to organize and execute a course of action to manage a job loss, transition or a return to purposeful work commitments.

*Resilience (R)* is crucial to successful navigation of the stress and adversity brought about by change. It results from how learners define, reframe and construct meaning of events. Rigid or habitual self-defeating thinking limits the ability to bounce back and move ahead. Flexibility, objective thinking, and rational explanation of setbacks increase resiliency and acceptance of change.

*Optimism (O)* is the ability to seek solutions, see the upside of things gone wrong, and reduce the gap between present and future. Not personalizing or catastrophizing failure, the mind stays open (rather than adopting helplessness) when performance sets one back. Believing that (1) good events have a permanent cause, (2) causes of bad events are temporary and (3) denying universal explanations for failure, expands opportunities.

*Intentional Exploration (I)* is looking for positive clues, welcoming planned (and unplanned) opportunities, and taking inspired action as a way to grow. These activities keep learners engaged and can help broaden, build and test possibilities.

*Clarity and Curiosity (C)* clear intentions and acting on purposeful commitments creates focus, reduces distractions, and maximizes energy. Being clear about internal motivation makes it easier to act intentionally, with integrity and curiosity. Curiosity is a readiness and openness to sparks of imagination.

As the traditional workplace disappears, designing one’s work based on purpose becomes an intentional choice. It frees a learner to navigate a lifetime of transitions with objectivity, self-direction and internal motivation. Adopting a HEROIC career mindset fuels learners to act on “what’s next”, regardless of the changes ahead.
Promoting Career Development and Resources to Bridge Learning and Work

The best places to learn and work across one’s lifespan are no longer those promising an education for life or employment security; but rather, those that promote career development, clarification of career and life choices, and resources for navigating a lifetime of transitions. With the help of public and private partnerships, learners and workers will increasingly accept responsibilities for developing HEROIC mindsets to support their motivation to adapt to change. As career development in Singapore and other nations focus beyond youth, time specific events, and graduate “destination rates”, it will be increasingly relevant and influential.

As adult educators, career counselors and specialists create, adopt, and utilize career development programs and interventions that encompass lifelong learning, creating meaningful work, and refined and expanded concepts of aging, greater numbers of learners (young and experienced) will be prepared to navigate a lifetime of transitions. Only then will Singapore have built enough bridges to identify emerging talent to support educators and governments in their effort to efficiently connect labour supply and demand.

REFERENCES


The VUCA world – a term we are very familiar with. Volatile, Uncertain, Complex and Ambiguous (VUCA) situations pose a challenging environment for businesses, managers and workers to operate in, and demand a much-needed range of new competencies. New and different capabilities and skills are needed to succeed, and this is the emerging VUCA Career for the workforce. Lifelong employment is a thing of the past; it is common nowadays for Singaporeans to change five to six jobs during one’s working career. There are many reasons why people change jobs. It could be to pursue opportunities for career advancement, such as promotion to a higher level of responsibility, better pay, or engagement in more challenging/meaningful tasks, among others. Sometimes, the change could be due to necessity and is not out of choice. Or it could be that a protean career is gradually becoming the norm, where careers are driven by the individual and not by the organization. Such an individual will typically place the importance of self-fulfilment and psychological success above external concerns and norms, leading to further job volatility.

The challenges that the Singapore workforce is facing are multiple and varied, and the following paragraphs will highlight some of the more pertinent issues that we are facing today in the context of the dynamic and VUCA business environment.

The VUCA environment either creates more jobs or leads to companies downsizing and retrenching due to the rapid and large-scale changes that are happening in the way business is conducted. Globalisation and technological advancements require workers to upskill continuously, and generational shifts have shortened to intervals of 6 years. Failure to keep abreast of skills training often leads to redundancy at work, and staff subsequently get replaced. Enterprising employers scout for talents and manage the talented staff in their workforce, shifting the balance of power back to the employee and nurturing protean workers who are aligned with company values. Optimal use of talents will subsequently maximise the workers’ contributions to the company, thereby giving the companies a competitive edge to keep ahead with business challenges and those of globalisation.

In the Singapore context, this is exemplified by the emerging work trend where more Singaporeans are seeking mid-career switches. These workers seek change after finding that their current jobs no longer hold meaning for them, or that they lack career advancement opportunities, illustrated by the growing number of individuals who are seeking protean careers and personal fulfilment. Other mid-career switches could be necessitated by family or personal issues, and these issues could potentially be solved
with the assistance of the employer. Similarly, older Singaporeans are encouraged to continue or return to the workforce if they have retired, and disabled individuals who previously could only work at sheltered workshops are now cheered on to find jobs in the open market. However, many employers are not equipped with the knowledge or skills to integrate these groups back into the workforce. Hence, a better self-understanding of career needs, changing work values, awareness of opportunities and support, are required to facilitate these mid-career changes.

Therefore, with these changes in Singapore’s employment scene, what is the role of career development? Who are the stakeholders in career development? How can career development be implemented at the workplace? The following paragraphs will examine these questions.

To start off, career development is defined in this paper as the mastery of one’s skills and knowledge and realising them at work, so that the person can obtain job satisfaction and be productive in the chosen career. This includes taking ownership for continuous learning and upskilling, usually with support from the employer. According to John Krumboltz (1994) in his Learning Theory for Career Counselling, experiences are our best teachers. It is thus important that individuals avail themselves to every opportunity to learn and experience, whether formally or informally. While attending formal education, seminars and conferences can be helpful, individuals can also improve knowledge and skills, and develop in their careers through work experiences. These experiences may additionally trigger individuals to consider acquiring skills and explore careers that they might not have considered earlier, hence opening the individuals to a wide vista of career opportunities. This possibility was also expounded by John Krumboltz (2009) in his Happenstance Approach.

Unlike previous generations of workers, current workers associate work with more than just a means of earning an income. They perceive work as an expression of themselves, as a part of their self-concept. Hence if the work does not offer individuals this form of expression, or the nature of the work does not align with the individuals’ self-concept, they may get bored at work and be unproductive. Such expressions of self-concept at work is central to Donald Super’s (1980) Developmental Theory.

Another set of theories which are useful to consider for managing talent at the workplace are the Trait-oriented theories. According to John Holland (1997) and Frank Parsons (1996) who were exponents of these theories, when a person’s work values, career interests, personality, strengths, and skills (traits) match their job requirements, the person is likely to find job satisfaction in doing the work, and be productive. John Holland and his associates also developed career development instruments to ascertain the

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1 The concept of the protean career dates to 1976, when in the book Careers in Organizations, Douglas T. Hall noted an emerging type of career form that was less dependent upon the organization in terms of defining success or achieving certain outcomes
person’s traits and categorise them according to the Holland’s code (RIASEC – Realistic, Investigative, Artistic, Social, Enterprising and Conventional). They posited that if there was a match between the person’s code and that of the work he does, then the person is likely to find more job satisfaction, which would spur greater interest and willingness to do the work, resulting in higher productivity. However, it was also noted that a person’s traits could change with new experiences, job demands, etc, hence talent scouting and management is not a one-off event, but a continuous review to understand the individuals’ motivation to work, and making changes to meet the individuals’ needs where necessary. So how do these theories connect and apply at the workplace?

Workplace Learning can be broadly defined as the acquisition of knowledge or skills by formal or informal means that occurs in the workplace. It mostly happens through work-related interactions, and research (Lombardo and Eichinger, 2010) has shown that 70% of the learning occurs informally through self-directed learning, networking, coaching and mentoring. Workplace learning is readily available in most companies, either as formal structured learning, or informal learning on an ad hoc basis. A variety of workplace learning methods has been commonly implemented in Singapore, ranging from Workplace Demonstrations, Job Rotation, Job Shadowing, On-the-Job-Training, Peer Mentoring, and more. In addition, Sveinung Skule’s (2004) research into learning conditions at work describes seven learning conditions to foster informal learning at the workplace, some of which reflect John Krumboltz’s Happenstance Approach. This further emphasizes the need to foster learning experiences and environments at the workplace to trigger individuals to independently explore careers and develop their skills.

This divergence from the classroom is increasingly happening as companies cannot afford to lose valuable time to train workers, and workplace learning allows a more hands-on approach that enhances the learning of practical skills and knowledge, which is more relevant to the worker. However, a company’s ability to implement Workplace Learning may be inhibited by individual (or worker) Values, Interests, Personality, and Skills (VIPS). Knowing the individual’s VIPS is an increasingly important factor when deciding and adopting workplace learning practices as the protean workforce grows. Other than individual VIPS, there may also exist other barriers that prevent companies from implementing workplace learning practices. Hence, career development professionals would be needed to assist in identifying these ‘pain points’ and tailoring programmes and structures before implementation to fit the needs and requirements of both employers and employees in achieving company goals.

The approach that is taken towards designing workplace learning initiatives also needs to be revised, as newer models have been found to correlate better with employee satisfaction, engagement, and ultimately workplace productivity. Older models focused on increasing revenue to drive profit and company performance. However, in today’s
context, simply increasing inputs to generate more outputs is not a feasible solution. The solution now is to find ways to increase output per worker, focusing on the idea of increasing worker performance through productivity and understanding their career needs.

Productivity can be increased with employee engagement, and this can be done by enhancing job-fit through the application of Holland’s Traits-oriented Theories and matching a worker’s VIPS. In some instances, employers may be able to actively take actions to increase this alignment with workers, such as through skills upgrading, internal company alignment sessions, or sending workers for seminars or workshops to cultivate interest. However, if the individual factors have a large degree of misalignment, such as non-matching or conflicting personality or values that are unable to be aligned or remedied, then a change in job role or career change may be a more feasible solution.

Providing workers with a sense of ownership over their career has also been found to drive productivity as workers feel more invested in their company and therefore are more motivated to work (www.careerinsiders.com/career_ownership.html). Hence, to increase this employee stakeholdership, companies can periodically get feedback from staff as to what functions they prefer up-skilling in that would help with their current job role and subsequently send them for the relevant training. This self-directed learning would motivate staff better, and create a culture of learning within the company that would help keep it relevant with the latest developments within the industry, which is essential in the VUCA business environment.

Besides workplace learning, talent development is becoming increasingly important in our labour limited work environment. Talent development goes beyond hiring the best person to take on future management roles – talent development can happen at virtually any stage in an individual’s career – from recruitment, to identifying existing staff, and even for career development facilitation such as through aligning VIPS to increase potential for further growth. The key to talent development is identifying these high-performing individuals, placing them in the right jobs, nurturing their growth, and aligning to the individual’s VIPS. This can also apply in a recruitment process through an interview or observation period, as well as from observing staff over time to form appraisals, and also during selection periods for staff promotion.

John Krumboltz in his Learning Theory for Career Counselling (1994) said that our experiences are our best teachers. A talent development system is about creating learning opportunities so that individuals can gain experiences, widen their knowledge and develop their skills to meet the organisation’s needs. The goal of career development in the talent development system is to help individuals learn to take action to achieve more satisfying careers within the organisation. Hence it is important that the talent development system creates opportunities for individuals to learn and experience, whether formally or informally.
After identifying talent, companies can then focus on retaining and grooming identified staff by giving them challenging (but not impossible) assignments to push their growth, utilising Holland’s Theory and Krumboltz’s Happenstance Learning Theory. Some examples include identifying their traits and giving them opportunities to work in teams and perform different roles with varying groups of individuals (such as across departments) to let them get acquainted with and develop a more balanced view of how the company operates, after which supervisors may assess their performance across these varied tasks to ascertain the growth potential of the individual.

Additionally, a crucial part of talent development is retaining talent. Beyond a fair pay, other benefits also play a part in retaining identified talent such as a positive company culture, good work-life balance, mutual trust and a set of values that match with the company, not to mention constant challenges to engage the staff. For a company to achieve this, they need career development planning for their staff. Career development planning can help companies identify, track and evaluate staff suitability to assess if they correlate with increased or maintained levels of high performance, optimizing the staff’s experience on the job and facilitating the experience of flow within the job, as illustrated by Csikszentmihalyi’s Flow Theory (2002). Having a sense of flow will keep the staff actively engaged with their job, optimizing interaction between individuals and their environments and enhancing psychological satisfaction.

To put things back in perspective, how can a company be involved, and how is this relevant to the average Singapore SME owner? Firstly, a company can focus on matching existing employees to their best-fit skills to ensure a good job fit. This will help motivate the employee as interests are aligned on both ends. Next, a company can continually upgrade employee skill sets through training which can be both formal and informal such as through workplace learning, workshops, and seminars. Lastly, a company can identify talent to groom, which can be done through objective and factual observations over time, such as performance tracking, interviews and observational studies; or through application of theories and models, such as by using empirically validated tools such as VIP24 (a VIPS measuring instrument), the Strong Interest Inventory, or Holland’s Code, among others.

A company may also want to equip themselves with knowledge of Super’s Stages of Career Development (1980), so that they can identify staff at various stages of career development and understand what is required most at each stage. This would help to optimize a company’s training and development budget, so that staff will not be sent for unnecessary or inappropriate training or interventions and can receive maximum benefit from each activity the company organises and sends them to. Companies who have a talent development system can additionally refer to Holland’s Traits Oriented Theory (1997), Krumboltz’s Learning Theory for Career Counselling (1994), and Super’s Stages of Career Development (1980).
Beyond developing their staff to meet their organisational or business needs, companies can take into account the VIPS and develop staff’s career resilience in the face of the VUCA business world. Results from tracking and appraisals can then be applied to assist in promotions both vertically and horizontally, bringing meaning to the data and results collected, and providing evidence to support the development of staff, becoming a system to document and enhance workplace productivity.

To conclude, Singapore’s development from a third world country to the first world has impacted the country and its people in many ways. This is especially true with regard to Singapore’s employment scene. Globalisation, technological advancement and socio-economic changes, together with Singapore Government’s policies to improve the lives of its people, have made significant impact. Working life is no longer what it used to be. Continuous up-skilling and skills upgrading at the workplace or through more formal means are no longer a choice but a necessity, whether for existing staff, and even for recruitment of staff. This includes recruitment of workers from all the different sectors of the population who have different, and sometimes special needs. It is therefore important to know what skills or additional skills one should have to keep abreast with the developments taking place in Singapore. Some workers may be able to identify the skills they need; others may require assistance from more knowledgeable colleagues or professionals. To ensure the company has a competitive edge in local businesses and/or take up challenges brought about by globalisation, companies have to scout and retain talent that can raise the company’s productivity.

Human Resource personnel, or those in the business of people development, particularly in career development, would surely benefit from accruing knowledge and skills in career development to help them in their work. It is therefore to be surmised that in view of the labour market changes happening in Singapore, Career Development is relevant and could contribute to a more optimum workforce. For individuals who want to engage and assist others in Career Development – there is a Future in Career Development!

REFERENCES


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INTRODUCTION

Over the past century, many occupations have sought to establish themselves as "professions" in order to be recognised for their area of expertise (Carr-Saunders & Wilson, 1933; Larson, 1998; MacDonald, 1995; Wilensky, 1964). The idea of ‘Professionalisation’ generally brings about a sense of importance and significance to the occupation as well as a sense of pride and worth to the practitioner. The sense of significance was evident from the ‘ancient’ professions such as the priesthood, university teaching, law and medicine to industrial-era professions such as engineering and architecture (Lester, 2010). Later occupations such as accounting, teaching, uniformed services such as military and police have also made their transition towards being professionalised with strong professional identities easily recognised by others.

Professional identity is largely a part of what it means to be a professional practitioner (Gazzola & Smith, 2007). It refers to “the constellation of attributes, beliefs, values, motives, and experiences in terms of which people define themselves in a professional role” (Ibarra, 1999, pp. 764-5). A practitioner’s professional identity serves as a framework for the making of professional decisions (Brott & Myers, 1999; Friedman & Kaslow, 1986).

As a young occupation, career practice in Singapore is considered the ‘new kid on the block’. In order for the practice to establish itself as a unique profession apart from the other helping professions (health-care, counselling, psychology, etc.), it is imperative that career practitioners know and understand what it is they do that will increase and enhance both theirs and the public’s perceptions of their professional identity.

OBJECTIVE

Due to the youth of this occupation in Singapore, very few studies have been made regarding how this occupation could build their professional identity as part of the journey towards a full profession. The objective and purpose of this paper is to identify the elements of practice currently adopted by Singapore career practitioners which support the development of their professional identity. Additionally, the findings of this study have the potential to further add to the discussion currently being considered about the development of a Singapore framework for career practice.
LITERATURE REVIEW

Discussions about professional identity of practitioners from various fields and disciplines have been ongoing. Professional identity is generally viewed as a complex, dynamic concept with multiple realities. It can be seen in terms of a profession’s collective status in the eyes of the public where the nature of its role, history and particular characteristics are observed and understood (Gale & Austin, 2003). It may also indicate an individual’s identity as a professional and is a reflection of the person’s ability to self-conceptualize in terms of how they define the occupation and its roles, how decisions are made, and the steps taken towards developing and acquiring expertise and professionalism (Brott & Myers, 1999). Each professional carries an identity that sets them apart from others outside of their unique field.

Professional identity development is seen as a life-long process starting from the point the individual receives training and education in a particular field of occupational interest. The professional’s identity gradually builds and evolves throughout the professional’s life-span (Hiebert, Simpson & Uhleman, 1992). Gibson, Dollarhide and Moss (2010) proposed that professional identity is developed through the way a professional self-labels; how the professional integrates their learnt skills and attitudes into their practice; and the influence of the professional community.

Professional identity in a practitioner begins when an individual enrols in a training programme or course of study related to that particular profession (Reid, Dahlgren, Petocz & Dahlgren, 2008). In their study of novice educators, Ronfeldt and Grossman (2008) found that students develop their self-image as professionals through the personae projected by the senior educators. Through observation, students construct their professional self-identity based on how these senior professionals relate and behave. Upon graduation from their courses and training, new professionals transit to a new environment where they are exposed to influences from fellow professionals, clients and other colleagues. These individuals develop their professional identity through the maturing of their sense of understanding of their work by the constant interaction present within the professional community and replicating behaviours that are aligned to that community (Auxier, Hughes & Kline, 2003).

New professionals also experience struggles in terms of the way they adjust to their own identity formation as a professional. Individually, new professionals experience fears and struggle with uncertainties regarding their abilities to implement their knowledge when working with clients (Gerrity, Earp, DeVellis & Light, 1992). Many new professionals feel unsure about their professional expertise and often think that they are deceiving themselves and their clients (Beagan, 2001).

With more experienced practitioners, their professional identity would have developed to a point where it is manifested in various forms such as the practitioner’s reputation amongst fellow professionals as well as with past and present clients, among others. Macintosh (2003) confirmed that an established professional’s reputation is often based
on their work experiences with fellow practitioners and clients. These practitioners would be noted for their consistent positive professional outcomes which in turn demonstrate their competence and proficiency. Expert practitioners also demonstrate highly developed skills which enable them to respond effectively to tasks and situations at virtually any time with limited preparation (Ericsson, 2008). According to Ungar (2006), the process of professional identity formation does not stop for expert practitioners but continues to grow into the phase of consolidation, which is in line with the last stage of Super’s (1983)\(^1\) theory of vocational developmental tasks.

Individuals who have been in a profession for a long time would have amassed a significant amount of recognition from colleagues from within the organisation they work for, clients and others from the professional community (Assuncao, 2006; Skovholt & Rønnestad, 2003). This group of senior professionals would have developed a significant base of professional knowledge of their field and many would be acknowledged as leaders or have taken up leadership responsibilities within the professional community (Swennen, Volman & Essen, 2008).

**CAREER PRACTITIONERS’ PROFESSIONAL IDENTITY**

Although there is ample research in the area of career counselling and development, little of that research has been about the professional identity development of career practitioners. In the US and other more developed economies, career practice has matured significantly to a point where the profession has had the time to develop a developmental framework and resources to guide practitioners in the profession. However in Singapore, career development and practice has only been in existence since the beginning of the millennium with many practitioners adopting practices gleaned from more mature practices such as in the US and Australia. Due to this occupation being at an early stage in Singapore, it is crucial that more studies on the development of career practitioners’ professional identity be initiated in order to further build the credibility and status of its practitioners.

**METHODOLOGY**

Since the objective of this research was to determine the various elements of practice which current practitioners feel are key to the development of professional identity, it was determined that the best approach for this study would be to utilise a qualitative method of data collection and analysis in order to better understand the processes at work. Due to the lack of clarity surrounding how professional identity is developed in Singapore, collection of data using qualitative approaches such as interviews allows for the important processes and other domains to be identified and recorded.

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\(^1\) Donald Super’s (1980) five stages of vocational development tasks include i) Crystallisation; ii) Specification; iii) Implementation; iv) Stabilisation; v) Consolidation.
RESEARCH PARTICIPANTS

For this short study, four highly experienced career practitioners were approached and invited to be interviewed as part of the data collection process. The four participants had much “lived-in experiences” (Denzin, 1992) of having worked with many types of individuals over the past decade. Two of the participants were working in a government organisation which provided career coaching services and two were private sector practitioners.

DATA COLLECTION

Semi-structured interview was the technique used for the collection of data amongst the participants. This approach was ideal as the participants had much to share about their experiences over the years and their insights into their personal development were unique and novel.

DATA ANALYSIS

In order to analyse the data collected from the interviews, I adopted thematic analysis (Aronson, 1994; Braun & Clarke, 2006; Boyatzis, 1998) and employed a four stage procedure namely: 1) collection and familiarization with the data; 2) creating and assigning of codes to the data; 3) searching and identification of themes; 4) defining and analysing the themes to support the research objective. This analytical approach was chosen because the research objective was inclined towards searching for themes or patterns of understanding about perceptions of how professional identity was developed. This approach was also very suitable for examining possible emerging themes without being restricted to any particular theoretical frame.

In phase one, the interviews were transcribed and carefully read and re-read (Rice & Ezzy, 1999, p.258) in order for the researcher to fully immerse into the data to grasp the content and experiences being related by the participants. In phase two, a coding process known as “descriptive coding” was adopted (Saldana, 2009). This approach summarizes in a word or short phrase the basic topic of a passage of qualitative data. Coding the data this way leads to a categorized inventory or summary which was used as a framework to populate the emerging themes from the data corpus. At the end of the coding process, six loose categories emerged. These six categories were then used as the foundation for the searching of themes to answer the research objective. These broad themes were then re-organised by re-examining the data to ensure that the first categorising attempts were relevant and reflective of what was shared by the participants. At this stage, I also began to look for relationships between the codes within the broad themes in order to surface additional observations which I may have missed out. Subsequently, the six broad themes were categorised into three major themes which were reflective of the participants’ perceptions.
The general literature on the development of professional identity identifies two key themes: “personal development” and “community engagement”. Based on the analysis of the research data, the findings were found to be generally aligned to literature albeit with a different slant. The themes which emerged from this study were “Adapting to expectations”, “Building knowledge and skills” and “Networking of professionals”.

Throughout their practice as a career practitioner, participants felt that there were periods where they had to develop their practice based very much on the expectations of the services their clients wanted them to provide, and in the case of the two participants who were government officers, the expectations and goals of the organisation they worked for. Apfelbaum (1958) defined expectations as the “anticipation of an event with the implication that this anticipation is held with some degree of certainty” (p. 103). The analysis of the data showed that clients and the organisation expected career practitioners to provide a range of services surrounding career development such as resume writing, job referrals and job placements. This perspective was best summed up by participant 2 when he commented that:

I would see that in my role, I am seen by both my clients and my organisation as a provider of career services. The range of work is not just coaching the client to find out their career likes or dislikes, but to help them to explore their career interests, what their values are like, teach and train them to write resumes, have good interview skills and more importantly, am I able to link them up to a job. Many clients come to us desperate for a job because they may have just lost their jobs or are having difficulty finding one. (Participant 2)

As part of the theme of adapting to expectations, participants felt that they had to constantly be conscious of clients’ expectations of the services career practitioners should offer and to adapt and equip themselves with the skills and knowledge to be able to meet the expectation of the clients. Although there may be times when the expectations were unrealistic, practitioners recognised that it was important that they worked together with the client (as well as the organisation they worked for) to moderate those expectations. Participant 4 stated that

I had to ensure that I kept growing professionally (knowledge & skills) so that I could respond rapidly to my clients’ needs as well as what (name of organisation) wanted me to provide… of course, there were times those expectations were unrealistic, but that simply means I have to be upfront and tshare the limitations of what I can do.

The second theme which all the participants in this short study reported having a significant impact in the development of their professional identity would be the need to
constantly build up their knowledge and skills. All spoke about the effect that the build-up of knowledge and skills had on their sense of their professional self-identity, especially when their clients report improvements with presenting issues that were directly resolved due to the application of the attained knowledge and skills by the career practitioners. This observation by participants was supported by Stoltenberg’s (1981) study where emerging helping practitioners’ identity was found to be built upon the integration of theoretical knowledge and skills within a developmental framework.

Being able to attend courses, workshops to increase my knowledge and in turn being able to help my client even more effectively gives me the sense that I am being recognised as more professional, more knowledgeable, more experienced. This enables my professional identity to become stronger. My managing director receives the positive feedback from my clients and everyone slowly knows what it is that we do and appreciates us for it. (Participant 1)

If you say you are a professional, then it means that you must have enough knowledge to apply it when doing career coaching. It is assumed that you have experiences and skills to know how to help clients. If not, then you better go and learn, increase your knowledge and skills to help your client. With this increased knowledge and skill, it will also mean an increased level of professionalism and then people will see and know. (Participant 3)

Participants also report that by keeping updated with their knowledge and skills through attendance at conferences and learning about new approaches to career development enabled them to have the ability to provide sound and competent coaching to their clients. In his study on effectiveness of career counsellors, Brown (2002) showed that licensed practitioners were very likely to regard attendance at conferences as an important factor in their ongoing counselling effectiveness.

Now that I have been practising for over four years in this place, I can see that I have actually grown in terms of my knowledge base, in terms of my confidence, in terms of how other non-career coaching colleagues view me. Each time I go for a career conference, I learn new knowledge and I make it a point to adopt parts of what I learn into my practice and with my clients. When clients feel that I have helped them resolve their issues much faster, I know my professional practice has improved. (Participant 2)

The third and final theme emerging from this study was the need for practitioners (both private and government) to continually network and engage in constant interaction amongst themselves in order to build a strong sense of professional community. Participant 2 described the importance of having career practitioners to regularly interact with other practitioners in a professional setting in order to share best practices.
It’s so important to build the connections with the other coaches within this big organisation. As you know, there are so many of us and I’m sure all of us have different experiences which we can share and learn from each other…I’m so glad that (name of organisation) organises the COP (Community of Practice). It is in these sessions that we can interact and learn what the coaches have done and hear from experts during the talk that is organised. (Participant 2)

One other finding supporting the third theme of networking amongst practitioners is the setting up of a professional career association in order to safeguard and ensure high standards of practice proficiency amongst practitioners. The setting up of an Association of career practitioners would also allow for a formal space for professional networking to take place amongst both private and government career practitioners. This finding is consistent with Wilensky’s\(^2\) (1964) model of professional development in which the setting up of an association was one of five key components necessary for an occupation to attain the status of a profession. Participant 4 stated:

We need to have an Association started soon. Other established professions have an Association that represents their interests. Doctors, lawyers, accountants all have to be a member of their association, otherwise they cannot practice. This is definitely one of the most important aspects to build our professional identity.(Participant 3)

CONCLUSION

This study has shed interesting insights into career practitioners’ perception of how their professional identity is developed. Further studies into this area of professional identity development of career practitioners will provide further understanding and perspectives for future career practice educators, practitioners and supervisors. The findings from this study could also be incorporated into the future development of professional development for career practice specifically tailored to the Singapore context. Furthermore, future research can also help to further define and describe ongoing progression for career practitioners’ professional identities and how they can be supported at different stages of their career journey.

\(^2\) Wilensky’s (1964) concept of professional development includes: i) the occupation became full time; ii) a professional association is formed; iii) a body of knowledge is developed for the occupation; iv) recognition of the profession through legislation; v) a code of ethics is developed
REFERENCES


Sypnosium Track 4 - Skills Utilisation
INTRODUCTION

The aims of this paper are twofold:

1. To reflect on what research and more recently policy developments across the four UK nations (England, Wales, Scotland and Northern Ireland) can tell us about how to advance Singapore’s strategic policy objectives concerning adult and lifelong learning (LLL).

2. To advance the case that job quality, work organisation and job design are an important potential ‘missing element’ within LLL policy that is finally re-emerging in the UK and that what happens within the workplace is crucial to the delivery of a significant proportion of adult learning.

What follows draws heavily upon two previous publications by the author (Keep, 2010 and 2016), and also on a SKOPE monograph by Michael Eraut and Wendy Hirsh (2007) on workplace learning, and those wanting the full detail on the arguments and issues being addressed in what follows should explore these source texts.

BACKGROUND

International context

There are now two fundamentally different models of what skills policy should comprise at national level. The first, traditional, model is concerned with increasing the quantity and quality of the outputs emerging from the education and training (E&T) system. For many years the best means of achieving this ramping up the supply flows and stocks of human capital within a nation state’s workforce/labour market was the sole focus of international skills policy debates (Keep, forthcoming). More latterly, in some policy arenas and settings attention has started to shift away from an exclusive focus on supply, and come to embrace issues to do with the underlying levels of demand (economic and societal) for skills, and their productive deployment within the workplace and the labour market (Keep and Mayhew, 2010). One example of this would be the OECD’s skills strategy (2012), which suggested that while skills supply remains important, much greater policy attention was now needed on strengthening underlying levels of demand
within many economies for skills, and also on ensuring that once created, skills were subsequently deployed to optimal effect within the productive process.

Another example of this policy trend, concerning skills utilisation, comes from the European Centre for the Development of Vocational Training (CEDEFOP), where in a recent report it stated:

“Skill formation is one of the main pillars of the European strategy for economic growth, EU2020. However, skills per se are not a source of growth; abundant and better skills can help the EU recover and sustain growth only if they are put to work. Skills are embodied in people. They manifest into productivity and innovation when they are deployed by workers in the execution of tasks. It follows that reaping the benefits of states’, businesses’ and individuals’ investment in skills can only be realised when people are in jobs that make good use of their skills; when this happens, skills can be the root of economic growth….Put differently, if skills are a necessary condition for growth, they are not sufficient by themselves. The next step is to create and design jobs that make the most of workers’ skills”.

(CEDEFOP ESJ survey Insights, Skills Utilisation = Skills Formation, 2016)

As a result of this shift in policy focus across the developed and indeed the developing world, more and more national administrations now perceive a need to grapple with a set of common problems within the skills area. These include strengthening the practical linkages between investment in skills and resultant productivity enhancement; boosting innovation, particularly workplace and bottom-up innovation; delivering effective skills utilisation within the workplace and work processes; understanding the impact of technological change on the shape of employment and jobs; and boosting job quality, especially at the lower end of the labour market and occupational scale. These are complex and difficult issues to address, and all of them move beyond the traditional policy ‘comfort zone’ of simple state-sponsored (and usually state-funded) measures to expand skills supply through improved schooling and more and better post-compulsory/tertiary education.

The policy context in Singapore

The Singapore government has recognised the issues raised above, and has embarked upon a new phase of its industrial strategy, with the aim of industry transformation propelled by internationalisation, innovation, productivity and skills. This covers a range of sectors:
Manufacturing: Chemicals, precision engineering, marine and offshore, aerospace, biopharmaceuticals, electronics

Built environment: construction, real estate, cleaning, security

Transport: logistics, air and sea transport

Essential domestic services: land transport, healthcare, education

Modern Services: professional services, ICT and media, financial Services

Lifestyle: food services, retail, hotel, food manufacturing

To support this, skills policy has witnessed the introduction of SkillsFuture. This has three over-arching policy objectives:

1. Strengthening educational pathways and enhancing inter-operability
2. Focusing on skills mastery
3. Ensuring learning takes place throughout one’s life.

These are, in turn, supported by four goals:

1. Help individuals make well-informed choices in Education & Training (E&T)
2. Develop a high quality, integrated system of E&T that responds to industry needs
3. Employer recognition and career development based on skills and mastery
4. Foster a culture that supports and celebrates LLL

Concrete policy developments to support the aims of SkillsFuture to date include reform and closer alignment of different qualification pathways; enhanced careers information, advice and guidance; and the further development of educational technology to enable and enhance timely and cost-effective delivery of LLL. In addition, the government has offered each citizen a SkillsFuture credit, $500 initially – to spend on courses related to work and employment, thereby putting purchasing power in the hands of individual rather than their current employer.

Given this set of initiatives and the goals that underlie them, what, if anything, might Singapore learn from English and wider UK experiences?

DEVELOPMENTS IN ENGLAND

Policy

The current situation sees the government embarking on yet another round of fundamental reforms of E&T that will impact on the institutional architecture of public E&T delivery agents (schools, vocational colleges, universities); funding mechanisms;
regulatory regimes; the qualifications system and individual qualifications therein; quality assurance systems; and careers information, advice and guidance. This reform process has been ongoing for a period of 35 years, and no end is yet in sight to the perceived need for change (Keep, 2006; Sainsbury, 2016). As Lord Sainsbury, an ex-New Labour cabinet minister and head of a recent government inquiry into vocational qualifications has noted:

“No area of public life has suffered from poor government policy-making, constant change and under-funding as technical education….To illustrate the rate of ill-thought-out change, in the last 35 years alone, there have been 28 major acts of parliament relating to vocational education and skills training”

(Sainsbury, 2016: 12)

Despite all this activity, the outcomes as they relate to levels of adult and lifelong learning are fairly bleak. Public funding for adult and lifelong learning now represents just 2.3 per cent of total annual E&T spend, and with the onset of substantial reductions in funding allocations since the early 2000s there have been resultant large falls in adult learner numbers (more than 30 per cent). Moreover, since the introduction of the new student fees regime in higher education (HE), there has been a sharp decline in adult, part-time students in HE (the volume has more than halved). At the same time, the annual amount (as measured in training days) of employer-provided training fell by 40-50 per cent between 1997 and 2012 (Green et al, 2013) – this despite massive government subsidy to support such activity and endless exhortation from the state to employers for them to do more and better (Keep, 2015). As a result, at a policy level there would not appear to be too many positive lessons to take from England.

**Research on workplace learning**

The area where England does have something useful to share with other developed countries relates to its development of a new research base on skills, job quality and work organisation. There has been significant investment, largely by the national Economic and Social Research Council (ESRC) in developing a much more integrated and sophisticated understanding of how people learn in and through work and the workplace. Examples of this emerging body of work include Evans et al, 2006; Eraut and Hirsh, 2007; Felstead, et al, 2009; Sung and Ashton, 2015 (for overviews of this body of work and its findings, see Keep, 2010 and 2016). Interestingly, in Singapore, thinking and research on workplace learning that forms a close parallel has been taking place – see Bound and Rushbrook, 2016.

**How the workplace is configured matters – the example of skills mastery**

This body of research has major implications for the objectives embedded in the suite of SkillsFuture policies. To take the example of encouraging skills mastery, research suggests that both skills mastery, and LLL in and through work, are dependent upon
two core factors. First, that jobs have a sufficient variety of tasks, an adequate depth and breadth of skills and knowledge requirements, and the discretion or space to allow workers to innovate. Second, that there are opportunities for progression (vertical and/or horizontal) to allow intellectual growth and new challenge. As a result, the incentives that would drive, and the conditions that would facilitate skill mastery are bound up with:

- Levels of hierarchy, autonomy and control within the workplace
- Discretion and problem solving elements within work and individual jobs
- Depth and breadth of job role
- Depth and breadth of skills/knowledge needed to do the job
- Style and values of the organisation’s people management systems and strategies

(Eraut and Hirsh, 2007)

To put it another way, Singapore’s policies around promoting individuals’ skills mastery stresses, “excellence and innovation”, and suggests the need for ‘passion’ – “to achieve innovation and skills mastery, we must be passionate and interested in what we are pursuing” (Ng, 2016: 7). But this begs the question of whether a high enough proportion of contemporary jobs offer good opportunities for passion, interest and innovation? Evidence from the UK suggests that this is often not the case, and that the way we configure work in the UK is frequently sub-optimal (see Keep, 2016 for a detailed overview). Many workplaces continue to design work in ways that stress short job-cycle times, routine and repetitive processes, and shallow and narrow skill and knowledge requirements. This produces a situation which makes poor use of employees’ skills, and at the same time, levels of bottom-up workplace innovation are weak.

For example, the findings of a 2013 survey of more than 3,000 UK office workers undertaken by Microsoft suggested that:

- The average office worker will spend 90,000 hours at work across their working lifetime.
- Process driven tasks dominate many workers’ lives. 71 per cent thought ‘a productive day in the office’ meant clearing their e-mails.
- 51 per cent of 18-25 year olds believe that attending internal meetings signifies ‘productivity’.
- When asked, ‘when was the last time you felt you made a major contribution to your organisation?’, 23 per cent responded that they believed they had never managed this. Only 8 per cent thought they had made a major contribution in the last year.
- Only 1 in 7 felt inspired by their job. 22 per cent agreed that ‘I typically am not excited by my work – it is just something that I do’.
The conditions to support workplace and employee-driven innovation are often lacking. 45 per cent of workers said they had less than 30 minutes a day to think without distractions

41 per cent did not feel empowered to think differently

42 per cent did not think they had the opportunity to make a difference at work

38 per cent said, ‘the business is very process-driven and spends little time on doing things differently or being innovative’.

(SOURCE: Microsoft, 2013 The Daily Grind)

Having too many jobs and workplaces that conform to this rather bleak and impoverished model will have major negative implications for a range of policy objectives around skills, innovation and productivity (Keep and Mayhew, 2014). This is because we know that certain configurations of work organisation, job design and people management practices support and embed better on-the-job learning (through the creation of expansive learning environments – Fuller and Unwin, 2004); facilitating better skills utilisation; enabling more workplace innovation; and thus opening up the possibility of potentially higher levels of productivity. There is thus a potential for a win/win/win/win across a range of policy objectives if we can find and engineer ways to increase the proportion of workplaces that have these characteristics.

Unfortunately, in England a very traditional skills supply dominated model of policy has continued to dominate, with an assumption that the workplace must be treated as a ‘black box’ within which public intervention is minimised (Keep and Mayhew 2010 and 2014; Keep, 2016). As a result, the joining up of the different elements of policy noted above has not taken place, and indeed the idea of workplace or employee-driven innovation has failed to find much, if any, purchase within public policy. Innovation policy remains obsessed by a simple, science-based model (see Keep, 2016 for further details). This is a major problem, because workplace innovation is a critical element in driving enhanced competitiveness and productivity.

Employee-driven or workplace innovation can be defined as:

“employee learning in the workplace – in terms of new knowledge, expertise and problem solving skills – constitutes the raw material for employee-driven innovation. Basically, employee initiatives and autonomy, on the one side, and the structure and conditions of work, on the other side, are important for innovation….innovation….is not conceptualised as separate units, but as embedded in daily work activities and job enactment and social processes in the organisation”

(Hoyrup et al, 2012: 12).
To achieve this we need firms where work is organised around what is termed ‘discretionary learning’, but in the UK, such workplaces are often lacking.

**TABLE 1 - Discretionary learning workplaces:**

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of employees covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portugal</td>
<td>26%</td>
</tr>
<tr>
<td>Spain</td>
<td>20%</td>
</tr>
<tr>
<td>UK</td>
<td>35%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>64%</td>
</tr>
<tr>
<td>Denmark</td>
<td>60%</td>
</tr>
<tr>
<td>Sweden</td>
<td>53%</td>
</tr>
<tr>
<td>Finland</td>
<td>48%</td>
</tr>
<tr>
<td>Germany</td>
<td>44%</td>
</tr>
</tbody>
</table>

(Source: OECD, 2010a)

Instead the UK has a lot of ‘lean’ workplaces. These ‘lean production workplaces’ have lower opportunities for learning and innovation.

**TABLE 2 - Lean workplaces:**

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>40.6%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>17%</td>
</tr>
<tr>
<td>Denmark</td>
<td>22%</td>
</tr>
<tr>
<td>Sweden</td>
<td>18.5%</td>
</tr>
<tr>
<td>Germany</td>
<td>19.6%</td>
</tr>
</tbody>
</table>

(Source: OECD, 2010a)

As these figures indicate, the UK is something of an outlier in terms of the way many of its firms approach work organisation and job design, but across Europe there is a growing awareness of, and concerns at the levels of poor skills utilisation due to deficiencies in the way work affords opportunities to deploy skills within the productive process (OECD, 2010a & b; Keep, 2016; CEDEFOP, 2016).

The importance of job design raises the issue of who designs or constructs the shape and content of jobs, how and to what ends? There is a long list of potential participants in this process, including:

- Specialist consultants – external
- Organisational Development function within organisation
- Senior Management
• Line managers and supervisors
• Production managers and/or process engineers
• Cost control systems and accountants
• Quality standards designers, quality assurance systems (e.g. ISO 9000), control and audit system managers
• Human resource function
• Health and safety system, rules and processes (both that imposed by government, and the systems internal to the firm)
• ICT and software systems designers and suppliers
• Plant and equipment suppliers
• Franchise management systems and the specifications they develop
• Historical precedent and traditions within the workplace (we’ve always done it this way)
• Customers – large ones and individuals
• Statutory regulation (e.g. in elderly care sector)
• Professional bodies

Unfortunately, and perhaps somewhat surprisingly, there is no body of recent evidence or research that addresses this question in a UK context, and it is therefore impossible to know how or by whom UK jobs are designed.

**LLL – courses and what else?**

Besides the implications of work organisation and job design for skills mastery and workplace innovation, the other area of policy for which there are important lessons is lifelong learning. Traditionally, the emphasis has been upon trying to ensure that more people participate in courses and other more formalised types of learning activity. However, the growing body of research on learning in and through work suggests very strongly that the vast bulk of learning that many adults undertake is via their everyday work. Courses can be important, but they are only part of the picture. Learning in and through work really matters, and official LLL strategies need to factor this in.

We know that learning at work occurs in three ways (Eraut and Hirsh, 2007). First, through work processes with learning as a by-product; second, through learning actions located within work; and third, through more formalised learning processes at or near the workplace.

**The first way - work processes with learning as a by-product, comprises activities such as:**

• Participating in group activities
• Working alongside others
• Consulting with colleagues
• Tackling challenging tasks and roles
• Problem solving
• Trying things out
• Working with clients

The second - learning actions located within work, is made up of activities such as:
• Asking questions
• Getting information
• Locating people who act as sources of knowledge
• Negotiating access
• Listening and observing
• Reflecting
• Learning from mistakes
• Giving and receiving feedback
• Using data bases, spreadsheets, technical manuals, etc.

The third - more formalised learning processes, means:
• Being supervised
• Being coached
• Being mentored
• Shadowing
• Visits to other sites
• Conferences
• Courses
• Working for a qualification
• Independent study

In overall terms, research suggests that the allocation and structuring of work is central to determining the level and success of learning because it is impacted on by the difficulty or challenge of the job; the extent to which activity was individual or collaborative; and the opportunities for meeting, observing and working with people who had more or different expertise, and for forming relationships that provide feedback and support
(Eraut and Hirsh, 2007).

The problem is that while the bulk of learning actually takes place within the first and second groups of activity, the vast bulk of attention (in policy, but also within traditional HRD textbooks on training and development) has traditionally been focused on the third set of more formalised learning activities (Eraut and Hirsh, 2007). This is not to say that courses are unimportant, but learning embedded within work itself also really matters. The problem is that, as we have already seen, many workplaces afford limited opportunity for the first and second forms of learning because jobs and work processes have not been designed in ways that would facilitate and support learning. Re-design is required to support learning.

In attempting such a re-structuring of work organisation and of the wider workplace environment, Eraut and Hirsh (2007) suggest the following attributes as important in supporting a ‘learning workplace’, where innovation is possible:

• Confidence and trust in managers and colleagues
• Mutual learning and support
• Giving and receiving feedback without blame
• Learning from experience, positive or negative
• Learning from colleagues, clients and visitors
• Locating and using knowledge from outside sources
• Attention to the emotional dimension of work
• Discussing and reviewing learning opportunities
• Reviewing work processes and opportunities for quality improvement

At the same time, re-designing work to enhance the space and opportunity for LLL means embracing a range of new ways of thinking about the optimal structure for jobs. These include developing broader notions of service, process and organisational innovation; task de/re-bundling and role broadening/deepening; changes to work scheduling/pacing in order to build in the ‘space’ for learning and reflection and to allow staff to try out new ideas; changes to decision-making processes, often in terms of their devolution from management to front-line workers; the development of progression routes (lateral and vertical) within employment, especially out of dead-end work, that are supported by appropriate learning and qualification routes where necessary; and finally ‘T’ rather than ‘i’ shaped qualifications that have a deep vertical knowledge and skill requirement as well as a broad transversal component of transferable and generic skills.

In addition, it is important that the organisation’s management sees beyond a competitive strategy based on the delivery of standardised, low specification goods or services, and that it wants to pursue incremental product, service and process innovation. As a result, management believes that workers at all levels in the organisation can contribute to this agenda, and it organises work and management systems in ways that facilitate this objective (Keep and Mayhew, 2014).
Re-discovering work and job quality as an area for policy

As this paper has suggested, the policy environment on LLL in England is somewhat bleak at present. However, education and skills policy is a devolved issue within the four UK nations (England, Wales, Scotland and N. Ireland), and the Scottish Government has been making strenuous efforts to break away from traditional skills supply-led policy models to integrate skills into wider economic development planning and delivery.

The Scottish Government’s recently launched Labour Market Strategy (Scottish Government, 2016) offers a new policy context, one far in advance of anything found elsewhere in UK. The strategy seeks to join up issues to do with wages; job quality; work organisation, job design and skill utilisation, employee voice; productivity, and workplace innovation. In terms of skills, productivity and innovation, it aims to achieve concerted interventions via:

- A Manufacturing Action Plan, supported by an advice and business support service
- A Productivity Action Plan for the food and drink sector as a means to trial how the different factors that drive productivity enhancement can be brought together and addressed in a single coherent package of policies and activities at sector level
- Scottish Enterprise (the main national economic development agency) is establishing a new workplace innovation service to help firms to embrace and develop workplace innovation
- Scottish Enterprise will also run three sectoral pilots on productivity within specific localities, with work in the digital industries (Edinburgh), health (the rural Highlands), and manufacturing (West of Scotland).
- A new national workplace innovation research centre - FITWork – is being established at Strathclyde University

After 35 years of UK policy makers ignoring work and the workplace (Sisson, 2016), it is now firmly back on the policy agenda, at least in Scotland. It will be interesting to see how these various policy initiatives progress and the degree to which they are able to support a broader approach within Scotland to transforming workplace practices, and there is potentially merit in Singapore and Scotland ‘swapping notes’ on their progress in tackling what is a broadly shared set of issues and objectives.

LESSONS FOR SINGAPORE

Given the research findings reported above, and the nascent policy developments that are emerging in Scotland, what lessons are there for Singapore’s policies and for the ongoing development of SkillsFuture? The following are suggested as some starting points for reflection:

1. Career and progression pathways into and within work are needed to support and power E&T pathways. Constructing pathways within the E&T system is relatively easy, but if these are not reflected in parallel pathways that allow for both vertical
and horizontal career and skills development inside organisations, occupations and sectors, then there will be little to incentivise and power individuals to progress inside the E&T offerings. The construction of these routes may be easy in some settings and industries, but much harder in others and it should not be taken for granted that all occupations and/or workplaces will find supporting this an easy task (see Morris, 2016).

2. There are a range of preconditions that underpin the ability of organisations to offer their workers better and more extensive opportunities to learn inside the workplace. One is a strong and highly capable in-house training/human resource development function, and Singapore has already taken significant steps towards securing this goal, via programmes such as the Advanced Certificate in Training and Assessment (ACTA) for trainers, and the Certified Workplace Learning Specialist (CWLS) programme. However, another foundational element in workplace learning, and one in which HRD expertise can play a vital role in strengthening, is high levels of job quality and job design that allows discretionary learning for a large proportion of the workforce. As has been argued above, this is critical to driving demand for LLL and enabling learning in and through work to take place. Interventions to support this approach have started to emerge in Singapore, such as the Learning@Work Boot Camp (see Lai and Lee, 2016 for an overview of the thinking that lies behind them).

3. Enhanced workplace innovation and productivity is heavily dependent on models of work organisation and job design. These models are, fortuitously, precisely those that also drive higher levels of workplace learning (see Keep, 2016).

4. In some sectors, the problems in making progress on these issues will be small. In others, they may be very significant. For example, a recent study of the security industry in Singapore (Gog, 2016) indicates that a low skill, low discretion workplace model remains dominant and that until wider sectoral competitive logics are challenged, making substantive progress will be hard to achieve. Employers will thus often need external expert help and support to re-think how they compete, and also how they design, organise and manage work. In other words, there will be a need for workplace development alongside more traditional forms of workforce development (see Keep, 2016).

All of this suggests that, “it is likely that many of the next major advances in policy and practice will be focused on what happens within the organization and the workplace, rather than the external E&T system” (Keep, forthcoming, page 685). Also, given its current stage of development, it seems likely that Singapore will take a leading role in trialling the kinds of policy interventions necessary to ‘join the dots’ between different skills, productivity, competitiveness and innovation policy goals within the workplace.
REFERENCES


Dealing with Staff Turnover
Understanding the Importance of Generic Skills Use and Job Quality in Selected Sectors
Zecharias Chee and Fiona Loke
Institute for Adult Learning, Singapore

This paper first provides a background of staff turnover from 2006 to 2Q 2016 across ten major industries in Singapore. Staff turnover comprises staff recruitment rates and resignation rates. It also shows the trend of staff recruitment and resignation rates for specific occupation groups like the Professionals, Managers, Executives, Technicians (PMEs) and Clerical, Sales & Service Workers by Industry. All staff turnover statistics were generously provided by the Ministry of Manpower. A brief outline on the Institute for Adult Learning’s (IAL) skills utilisation studies where the data in this paper are drawn is described. We also attempt to explain why the trends of staff recruitment and staff resignations show the trends they show.

Next, generic skills use is a first line of argument to explain staff turnover. Although not widely expounded, the extent of generic skills use in organisations can explain staff movements. A regression model was used to establish the relationship between generic skills and other skills (e.g. computing) use and job commitment on the assumption that staff turnover is lower if staff are more committed to their jobs. In the next section, job quality is discussed. The measure of job quality was dissected into various constituents. Regression models are illustrated to establish the relationship between job quality dimensions and intention of leaving their organisation with a focus on three sectors, namely, food services, hotel and retail sectors. As job commitment is considered a proxy to staff movement, staff’s intention of leaving their organisation is also indicative of staff movement in an organisation. This paper will round up our discussion by highlighting the key takeaways about the factors affecting staff turnover. Despite the brevity of the paper, we hope that it will generate some afterthought for readers, particularly managers and human resource practitioners.

This paper essentially covers three broad objectives. First, it offers insights on the relationship between generic skills use and job commitment. An understanding of this relationship can help organisations to manage persistently higher staff turnover in the three sectors of interest, namely, the Food Services, Hotel and Retail Sectors. We will also show that some job quality characteristics are important factors for organisations to take into considerations in their human resource policy. By doing so, they may offer some insights to help human resource practitioners in the three sectors to arrest the trend of persistently higher turnover compared to the other sectors.

Now let’s draw our attention to staff turnover. As mentioned earlier, staff turnover comprises staff recruitment and resignation rates. In essence it captures the staff
movements between jobs in an organisation. From chart 1, a recruitment rate of 5 means that on average, in an establishment of 100 employees, 5 persons are recruited monthly (for the purpose of simplicity). Two main observations can be made from these charts. First, the Food Services, Hotel and Retail Sectors had persistently higher recruitment rates relative to other industries. Second, when there was an economic downturn or recession, there was a dip in recruitment rates.

**Chart 1 – Trend of Average Monthly Recruitment Rates By Industry**

Let us look at Chart 2 on Average Monthly Resignation Rates. Similarly, a resignation rate of 5 implies that on average, in an establishment of 100 employees, 5 of them resigned in a month (for the purpose of simplicity). The same trend is observed for the three sectors: a persistently higher resignation rates across the said period. For example, we can observe that during the recession between late 2008 and 2009, there was a severe economic downturn, so resignation rates correspondingly fell. Similar dips were shown in late 2014-2015 when global economic conditions were sluggish, partly due to domestic economic restructuring efforts.
We can see from Charts 3 and 4 that there was a persistently higher trend of recruitment and resignation rates of Clerical, Sales and Services Workers as shown for Food Services, Hotel and Retail Sectors. It could be due to the fact that there is a greater proportion of employees in these sectors who are rank and file workers.
Our Skills Utilisation Studies are our main data sources in this paper. The studies developed a first ever set of baseline skills data that measure skills use and job quality in the jobs our workers hold in Singapore. It is one of the two data sources that measure skills in Singapore. The other is Programme for the International Assessment of Adult Competencies (PIAAC) which is a form of research collaboration between national governments and the Organisation for Economic Co-Operation and Development (OECD) that survey respondents to assess the level and distribution of skills amongst adults and the extent of skills use in various contexts.

Our empirical findings demonstrate that there is a case to pay closer attention to generic skills use and improving job quality characteristics. These enhancements through human resource policy making may help increase job commitment and decrease the incidence of resignation. They may in turn help human resource practitioners manage high staff turnover in our sectors of focus typically requiring high labour intensity.

Generic Skills Index is a summative measure that comprises nine types of generic skills: literacy, numeracy, physical, influence, planning, communication, problem solving, leadership and teamwork. What is the pattern of generic skills use among the industries? We can see from Chart 5 that Accommodation and Food Services Sectors were at the bottom in almost all types of generic skills use except for teamwork and physical. Retail Sector generally required lower literacy, teamwork, leadership, problem solving, communication and planning skills relative to other sectors. It scored higher than Accommodation and Food Services Sector though.
Chart 5 – Generic Skills Use By Industry

Respondents were asked how much they agreed or disagreed with the statement 'In my current job, I have enough opportunity to use the knowledge and skills that I have'. We can see from this chart that workers in Food Services, Hotel and Retail Sectors had one of the least opportunities to use their skills relative to those in the other sectors.

Chart 6 shows the opportunity to use skills. Respondents were asked how much they agreed or disagreed with the statement ‘In my current job, I have enough opportunity to use the knowledge and skills that I have’. We can see from this chart that workers in Food Services, Hotel and Retail Sectors had one of the least opportunities to use their skills relative to those in the other sectors.

Chart 6 – Opportunity to Use Skills By Industry
Figure 1 shows the relationship between job commitment and Generic Skills Use. As mentioned, job commitment is taken as a proxy to staff movement. The higher the job commitment, the smaller the staff movement, in terms of resignation rates and staff turnover. To capture this relationship, respondents were asked, ‘I would turn down another job with more pay in order to stay with this organisation.” To what extent do you agree or disagree with this statement?’ We can see that there is a positive and statistically significant relationship between generic skills use and job commitment. Higher generic skills use, higher job commitment which in turn may likely lead to lower staff turnover. This may be an area for managers and human resource practitioners to think about to manage their staff turnover.

Figure 1 – Relationship Between Job Commitment and Generic Skills Use

This section discusses the influence of job quality on staff turnover. Broadly job quality is broken down into five non-wage dimensions in our studies, namely, job security, well-being and job autonomy, work time quality, skills development and career prospects. Regression analyses were conducted for Food Services, Hotel and Retail Sectors.
Figure 2 – *Relationship Between Intention of Leaving Organisation and Job Quality in F&B Sector*

*Question* - "How likely are you going to leave your current job in the next six months?"

The model also considered the following variables: age group, gender, highest qualification held and gross monthly income.

Samples are not representative of actual sectors.

Figure 3 – *Relationship Between Intention of Leaving Organisation and Job Quality in Hotel Sector*

*Question* - "How likely are you going to leave your current job in the next six months?"

The model also considered the following variables: age group, gender, highest qualification held and gross monthly income.

Samples are not representative of actual sectors.
Respondents were asked, ‘How likely are you going to leave your current job in the next six months?’ From Figure 2, for F&B sector, it can be observed that well-being & job autonomy and career prospects are important variables to explain the intention of leaving their organisation. Basically, the lower the well-being & job autonomy and career prospects, the greater the intention of leaving their organisation. Job security, work time quality and skills development have no statistically significant effect on the intention of leaving the organisation. For Hotel sector in Figure 3, well-being & job autonomy, career prospects and skills development influence staff retention at a statistically significant level. On the other hand, there is a negative relationship between career prospects and intention of staff leaving their organisations, and between job security and intention of staff leaving their organisation in the Retail sector as shown in Figure 4.

In conclusion, there is a positive relationship between generic skills use and job commitment. Job commitment can be seen as a proxy to staff resignation. So greater generic skills use may mean a lower staff resignation and hence staff turnover. However, there is a general negative relationship between job quality and intention of employees leaving their organisations. Improving job quality may help to reduce the intention of employees leaving their organisations and hence staff turnover.

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Panels
Our Journey to Mastery panel comprises industry experts who will share what influenced their career choices, and their strategies used to develop and deepen their skills over their careers. They will also talk about what helped them navigate changes in their career, and discuss what they consider as vital for one’s journey to mastery.

First, a brief introduction to the panelists: Chef Eric Low is the chef-owner of LUSH Epicurean Culinary Consultancy. Dr Goh Tzu Huat is Manager for Technology Development and Product Diagnostics from GLOBALFOUNDRIES. Mr Lim Yeow Khee is Associate Professor, School of Mechanical and Aerospace Engineering, from Nanyang Technological University. Mr Muhamad Salahuddin bin Ibrahim is lead teacher at Serangoon Junior College and Ms Pushpa is principal of the Ramakrishna Mission Sarada Kindergarten.

Dr Hee Soo Yin, Director of Learning and Professional Development, IAL, will moderate this session.

Thank you. It gives me great pleasure to moderate this panel discussion. We have on our panel, five very accomplished individuals. I would like to introduce each of them, and invite them to tell us first, what actually influenced their career choices, as well as the career changes that they have made. This will set the context for our understanding of their stories of their respective journeys to mastery.

Chef Eric Low has won many awards. He has worked in the kitchens of several high profile worldwide cruising super yachts, catering to many state dignitaries, royalty, celebrities, and prominent business leaders.

He is also the author of several cookbooks, including one on heritage and festive recipes, that won recognition as one of the world’s top five Chinese Cuisine cookbooks in the annual internationally acclaimed Gourmand Cookbook awards for 2015.
Chef Low, I would like to invite you to share a little bit about your journey and the influences to some of your career choices, and changes to your career.

Chef Eric

I think first maybe you got to ask yourself what prompts you to jump into a career that you want. For me, basically it’s about food. You know, I like to eat, I enjoy food, I love to cook. And basically it’s also a profession whereby you never starve. Right or not? Be it good or bad times. I think everybody will agree with me on that right? So...yes, there was also a calling, basically it’s in my family line as well. But, the question I had for myself was where I take it to, you know, when I jump into the trade.

You know, usually many of us in F&B, somehow there’s always a family member that is kind of an influencer, and most of us would ask ourselves, if I were to join this trade, or this profession, where would I be going, where do I look for my inspirations? And basically, it’s not an easy trade also, F&B is one of the toughest industries in Singapore. As you know, you often hear complaints that there’s not enough people working, you know, although we have a lot of culinary schools, F&B schools in Singapore. So, a lot of motivation, passion is required to stay in this profession.

Moderator

Thank you. Next up, let me introduce Dr Goh Tzu Huat. Dr Goh leads a team responsible for product failure diagnostics and advanced methodologies to accelerate yield RAM (Random-Access Memory). He achieved his Bachelor of Engineering, and PhD in Electrical and Computer Engineering from the National University of Singapore. His doctorate research on refractive solid immersion lens, was awarded a conference best paper, and he was part of a team project that received the 2009 Singapore President’s Technology award. His works have been presented at conferences, and published in journals.

More recently, together with his team, they invented a new technique called Electrically-Enhanced LADA (Laser-Assisted Device Alteration), which won a conference Best Paper in 2015. This has just been commercialized this year. At the international level, he’s also very active in organizing conferences, and co-chairing technical conferences in his domain area. Dr Goh, would you like to share with us what influenced your choice of career and what influenced the changes.
Dr Goh

For me, it is more of an incidental exploration, and a self-revelation on what I really want to do. So, maybe I should explain by telling you my childhood story, to slowly bring the answers to you. I consider myself a late-bloomer, a very classical example of most of the youths. We are late bloomers, so we followed the education system. But at this point of time, I looked back and I asked myself, why am I a late bloomer?

And I try to find out how we can accelerate and educate the youth that come along. As a child, my parents did not have a lot of higher education. I would say they are good mentors in term of life values, but they are not really good career mentors. So, I followed through the normal route of going through the secondary schools, junior colleges, and all this time, I still didn’t figure out what I want to do. But all I knew, and all I can hear from advice from friends is that, just take any subjects that opens your career options as wide as possible. Don’t narrow yourself.

So, I just followed through, and even up till the stage where I was at university, I still didn’t know what I wanted to do. So, the tipping point was actually in my third year of university. I was given a chance to choose, whether I should do an internship for six months, or I continue to take academic modules and then do a part-time or do a vacation internship. So at that point in time, I told myself, okay it’s enough of education and studies. Let me take a break of about six months, and do an internship for six months. And then from the job vacancies available on the system, in the NUS (National University of Singapore), guess what is the first thing I’ll look for in the company? Not knowing what I wanted to do, naturally I go for the one that pays the highest.

So, you know, I'm not a top tier student, so obviously I look at the highest pay as an intern, of a thousand two hundred, I said, wow that’s a lot. But, you know, this is Exxon-Mobil, whereby I can't even “smell” it. So I go for the second tier companies and I landed myself in a semi-conductor company. So at that point of time, it was Micron Semi- Conductors.

So I started my internship there, and it was at that point of time and I realized that I am actually a more analytical person, and I find a sense of achievement and a sense of fulfillment when I translate whatever I have learnt in school to something that solidifies and crystallize as a project, or as a product. And, as days go by, I realised after the internship, things seem to be clearer to me that this is something that I might want to explore as my career.
So, this led me to my final year project that used the skillsets that I’ve learnt in my internship. I continued to explore, the formula that I seem to have found, which is that whenever I develop something new, I create an impact, I feel a sense of achievement. Of course that impact at that moment, was just within the company or within the department. It was a very small impact. But I could already feel it, you know.

So that formula actually took me all the way through my post-graduate studies, and everything seems to work well, and this is where I landed in. I’m an engineer in the GLOBALFOUNDRIES, and of course I’m still exploring, how else I can create an impact to society. So, to end off, I would say that if any one of my friends had told me that you can choose your career based on your interests, or you can do whatever you like. And whatever you like, you build it as an interest. To me, it is a little bit…difficult…to assimilate. It is more about the sense of fulfillment and to feel for yourself along the way of your journey, what really drives your adrenaline. That is what really influenced my career choice.

Moderator
Thank you. Next up, we have Pushpa who made a career transition about twenty years ago, to the early childhood sector. She has not looked back since. Driven by her passion to bring out the best in every child, she’s a strong advocate of continuous learning and innovative practices to improve the quality of early childhood education in Singapore. She was awarded the Early Childhood Development Association’s Outstanding Early Childhood Leader award in 2013, and was appointed ECDA (Early Childhood Development Association) Fellow in 2015.

Ms Pushpa
Hi, good evening. I spent the bulk of my adult life in the commercial world, in a corporate setting. And when I moved over to early childhood, I gave myself six months to get used to the noise, to the sounds and to endless little people running around. I told myself if I am going to make it, I’ll make it in six months, if not, I won’t. And today, my career is my vocation. I like what I do because from day one, I’ve always been passionate about teaching. And I’ve been told you know, as a young person leaving school, don’t go into teaching! After three years, you’ll be bored stiff. Get into the commercial world, it’s more exciting. Yes, no, maybe? But when I had to make a choice in a mid-life change of career, I said, let me give my passion a chance. If it is to be, it will be. And it is. I said that, I now know that I have entered a new field, and I have to start from the bottom. So I began all the necessary training, all the necessary qualifications, and worked myself up. I think
the passion, the drive...many people anchor on passion, and say I've got the passion, I want to do this.

But if you don’t equip yourself with skills and knowledge, very soon, passion will fizzle off. Because you have no staying power. And I think the journey to mastery is the ability to fuel your passion further, with the necessary skills and knowledge. And I am very conscious of that, and very reflective in what I do. And that learning journey has not ended. In fact, I think it’s just beginning. I enjoy my work, and here I am. Thank you.

Moderator Thank you, Pushpa. Next up, we have Mr Salahuddin who is lead teacher in Serangoon Junior College. He has served in education for 18 years, and played an active role in advocating a teacher-led culture of professional collaboration and excellence. He won the caring teacher commendation award from Exxon-Mobil in 2008, and the Serangoon Junior College Annual Caring Teacher Award in 2011 and 12. He was also conferred the Associate of the Academy of Singapore Teachers in 2012, 2013, and 2016. And he’s also a recognized Fellow of the Academy in 2014. Most notably, he is one of six recipients of the President’s Award for teachers in 2015. Mr Salahuddin, would you like to share with us the factors which influenced your journey.

Mr Salahuddin I have been teaching for 18 years. I was born to parents who were both teachers. And they both told me not to enter teaching. They said no, it’s a thankless task, and I said, okay, I will not teach. And I said I’ll become a doctor. And then lo and behold, in JC (Junior College) days, to become a doctor, you needed to have physics, and I have a hate-hate relationship with numbers.

So, no physics for me. So in the end, I became a biologist in the university. And in my third and Honours year, I actually did some work with students. I did some guiding, I did some classes at the Science Centre. And I discovered that hey, I can relate to kids. And I can connect with them and I felt this desire, this need, to make a positive impact in their lives.

And I joined teaching. And no regrets. And as a teacher, I’ve had many, many challenges, many...U-turns even. In my fourth year I was a head of department which is two steps away from principal. And in my sixth year, I decided, I’ve had enough. It wasn’t really calling out to me, it wasn’t something that was resonating with me at the level of my heart, my emotions. So I stepped down. I became what we call a HOT, a Happy Ordinary Teacher.
Mr Salahuddin  Yeah. Say that to any teacher, they’ll know what you mean. And I was happy and ordinary for another three years. And then a new principal came along, and he said, “Look, I want you to step up to become a teacher leader, to join the teaching track.” He said, “Give it some thought.” I said okay, I’ll go away and think about it. Before I could get back to him, he announced to the whole staff that I had agreed.

So that’s where it started the journey as a teacher leader, which went on to be a senior teacher and now I’m a lead teacher, and it’s a journey that I’ve not regretted. And it’s been really fulfilling. Because not only am I able to grow my own students, in my own class, I’m able to grow fellow teachers, to mentor them, to guide them, to run workshops for them, and then they can go out and grow their students. So the impact is now a lot wider.

Moderator  Thank you. Last, but definitely not least is Professor Lim Yeow Khee. He is Honorary Fellow, and President of the Singapore Institute of Aerospace Engineers, Managing Director of LYK Aerospace Private Limited, and a member of the Civil Aviation Authority of Singapore. He is also a Fellow of the Royal Aeronautical Society, UK. He has been in the aerospace industry for more than forty years, and has held various technical and management positions in a major airline in Singapore. A consultant on aviation training and maintenance, repair and overhaul processes, Prof Lim also teaches at the Nanyang Technological University.

Prof Lim  Well, thank you for inviting me for this session. As I said as a lecturer, we can speak for hours, but I will not do that. First of all, when I left school, that was way back in 1968, and there was an advertisement in the newspapers saying, ‘apprentice aircraft maintenance engineer’. When I saw the word ‘engineer’, I didn’t even know what the rest was, I jumped into it.

And guess what happened, they paid me 137 dollars per month. I didn’t care. That was to change the whole career of my life, because the opportunity to work on an aircraft was something I have always wanted. And, it was exciting, we spent a lot of time working and I soon realized that there’s so much to learn on the aircraft, I actually foolishly said something very career limiting to my boss. I said, don’t bother promoting me, I love engineering. And don’t do that kind of thing to your bosses okay?

But anyway, I enjoyed the process because, the culture, the environment was very supportive. In the early days, in the 60s, there was very little competition. Life was easy. I have the passion; I have the focus. And I have a lot of energy to do a lot of things.
So, there’s no need to compete to be the top. And very quickly I got out of what you call, the survival instinct, you know, Maslow’s bottom of the triangle. As always I advise young people that, if you want to move into a career, you have to get out of the survival mode. And move into reflective mode. As what Professor Reid mentioned, “very important to get into reflection.” And I had plenty of time to reflect on what I did, and do all kinds of things.

So the real opportunity was actually the transformation of Singapore’s aerospace industry. When I joined the airline, it wasn’t Singapore Airlines. For those of you who don’t know, it was Malaysia-Singapore Airlines. The consultant was telling…Mr Lee Kuan Yew, you are too small to have an airline, you better join with Malaysia. And we had a partnership then.

But, soon things would change, and I was in an industry that grew by two digits for a good twenty years. That makes career planning easy — don’t have to plan. So the important thing is that I have this very good environment, and I enjoyed the journey throughout this. And I can say today, after 39 years in Singapore Airlines, even after I retired, I continue to do aerospace, like sitting on the boards and teaching, and in a way continuing an unfinished job. There’s so much to learn, and the aerospace industry has transformed. Today, we are not flying aeroplanes any more. We are flying people. So the whole focus has changed. Now, today, we are talking of human factors, we’re not talking of reliability of the aircraft only. And I find there’s a huge, huge job in front of me, that, to make sure that for Singapore’s aerospace to continue, we have to build the aviation culture as one that is strongly based on technology and the safety of the aircraft…so here I am, I’m still continuing working so that the future of air travel will be safe. I hope to share my experience with young people.

**Moderator** Thank you. I’m going to ask the panel some questions, and, please feel free to just jump in if you want to share with the participants anything which comes to your mind. The question which I want to ask is, how did you come to have a strong sense of professional identity and purpose in your career?

**Prof Lim** Well for me, it’s easy, because as an aviation professional, we always have been drilled, right from the training days, safety is ultimate. And then, because of it’s complexity, we have to follow rules but again, having said that, following rules is not good enough. I always tell people, you have to go back to the fundamentals. Look one step back, two steps ahead. Because whatever you do has a consequence. And in my industry, the consequence is unmentionable, you see.
So we were instilled with that professional value right from the day I went into the industry. And up till today, I’m still pushing this. Go back to fundamental, look one step back. All of us take shortcuts, that’s the nature of our brains. If you want to take a shortcut, be aware of what you are shortcutting. And think of the consequences, two steps ahead. Then, you will be safe.

Dr Goh  Maybe I should speak next. So, I think the key word is, professional identity. So, to me, ‘professional identity’ basically means professional self-branding. So, you would ask me what is this, why do I have to have a sense of professional identity, and how do I relate it to career?

So, the way I see it is that, having a good professional self-branding, is important for you to build a career. You need it in order for you to propel your career to where you really want to head for. So, if you bring the analogy like “Just do it” for NIKE … Google, Facebook, all these are brands. In the retail world, everywhere, and in everything you do, you need a brand.

So, I have heard of a saying from one of my bosses previously, that you can be a very good horse, among a herd of horses. But, if you are not outstanding enough, and if I don’t pick you as the horse, you will always be the ordinary horse that’s running around the grassland. So my point is that…professional identity is important, and you need it in order to do well in a career, to grow your career.

Ms Pushpa  I may not quite agree, I think professionalism comes from what you want to serve, what is the objective of your existence. You are a professional, when you do what you do and you put in your very best, and the outcome is critical.

In the field that I’m in, young children’s minds, emotions are very critical in the ultimate development. My professionalism will be in the way I work, in the way I make myself equipped professionally, in terms of my qualifications, my experiences, my reflectiveness, and engagement with parents and the society.

So, professionalism is slightly different for my field, for the field of early childhood, because our value to children and their lives is slightly different from valuing a product. So it’s a question of perception.

Chef Eric  Well I think if you talk about perceptions, my industry is the one that is not really the top choice for a lot of parents who want their kids to be in.

Ms Pushpa  Yes.
Chef Eric

You know, being a chef is really a tough life, I mean you don't usually start off as a chef. You start off as a cook. But for all of us in this industry, you know, the word ‘chef’ has a meaning beyond just running a kitchen and leading a team of cooks. Because the word ‘chef’ stands for what: you **Cook**, you **Heal**, you **Educate** people, and you **Feed** people.

So, you know, it's a very meaningful profession, although it's not really the top choice of careers for many youngsters. But I guess in Singapore, this profession recently in the last few years, has really gotten a lot of spotlight, and then even just in this week itself, I think the buzzword you see on media now, it's about Olympics. And you know, the Singapore chefs just like the rest of the sports, we have brought in our gold medals, we have brought in the overall championships, and we got a lot of mention. So, this has given a lot of different profiling to the career, but at the end of the day, it's just not about competing, it's about what you really do, and what you love to do, and what you want to do.

Mr Salahuddin

For me it's never been an issue in terms of my professional identity and my sense of purpose because to me teaching is a calling, it's really not a job. It's something that once I got into it, once I figured out that’s where I needed to go, it was something that I love connecting with students, and now connecting with teachers, and making a difference in their lives, and that keeps me going, and I believe that many teachers, and also many professionals in many careers also have that connection with their job.

It is an emotional connection, a real reason why they join and are doing that particular career. It's not for the money, it's not for the job. There’s something that resonates with them about it. Now I’ve seen that in my teachers, I have counseled teachers who wanted to leave the service, and the turning point was always when I asked them, why did they join teaching in the first place? And once they start to realize that, and they start to sort of, get back, centre themselves to their core purpose of being in teaching, everything else becomes a non-issue, and they can sort of re-centre, and get back on track. So it's important that the people that we work with, the professionals that we work with are connected with their reasons for being in that particular career. It helps a lot.

Moderator

My next question: what are the key strategies you have used to develop and deepen your skills over your career?
Mr Salahuddin  Okay, I'll carry on. For me, there are a few, but one has already been mentioned, I think it's probably one that all of you would say if you were asked this question. That's reflection. It's very, very important that we are reflective practitioners, that we reflect not just after an event, in my case, after a lesson, but during as well. You know, as you are doing things, you are constantly reflecting, what's working, what's not working. And that has helped me a lot. Another thing that has helped me a lot is distilling things that work for me.

Sometimes you do something and it works, and then two days later, you've forgotten why it works. If you write it down, if you break it down into its constituent parts, it helps you remember in the longer run. And it helps you also help others. So if my teacher came to me and asked me, how did you make that lesson work so well? I can explain it in a much more measured and clear manner. So write things down, it works for me. Finally, developing others. Now that I've taken the step up to be a teacher leader, in developing others, it's helped me develop myself tremendously. It's forced me to reflect on my own processes, my own sort of beliefs and values, and it's helped me grow. So in helping others, I've been helping myself too.

Ms Pushpa  I'll add on, and say that I agree...Singapore is a very 'kiasu' high energy centre. We're very focused on action and results. And these moments of reflection, are critical. To be able to reflect individually, why I do what I do, I reflect using different hats, as a leader, as a teacher, as a person, what would the parent think? So, I think, reflecting from different perspectives, reflecting individually, are your values actually coherent with your actions? These are critical questions we have to ask, and when we reflect individually, and we reflect as a team, I find that it's very helpful for other people to tell me where I've gone right, or where I've gone wrong, and where the tweaking can be. I think that makes my learning deeper.

Chef Eric  I think in my sector, the continuing education is very important. I mean regardless of what level of the chef you are in, you're a sous chef, you're a celebrity chef, you're master chef, you are executive chef, the day you stop learning is the day that you stop really becoming a chef, because in our trade, it's constantly evolving. There are a lot of trends, a lot of technology going on, and we just cannot stop learning.

And you really need to continue learning to get yourself inspired, to push yourself. And you also learn through training others. When we train the younger cooks that come in, we do judging and competition, we give feedback, but at the same time we are there, we look at what the younger generation of people are thinking about, how they
express themselves through food. And we learn from them.

How one generation thinks differently from another, and we go to different countries, we learn different cultures and cuisines. So I think the clear definition here is the learning journey never stops. It continues all the way, and you take it with you all the way, as long as you’re in the profession.

Dr Goh

For engineering, when I first joined, I viewed that one of the key strategies that a new entry engineer should have, is that you should always stay humble and develop a ‘thick skin’. So, I still remember some incidents whereby when you join as a fresh ‘green’ engineer, there are a lot of knowledge that you’re unfamiliar with, where direct knowledge from schools doesn’t apply. There are a lot of cultures that you have to figure out by yourself.

And you know, I tried to ask a question to one of the senior engineers, and you can feel that hostility that is in them. “Don’t waste my time. You go and read it yourself”, and stuff like that.

But, I told myself, this time round I might sound stupid when I ask you a question that might be simple to you, but after a few rounds, I can tell you I’m not going to ask you any more questions. And I become better than you. So, this is the mindset that we need to have.

But at the same time you stay humble, and keep asking questions. Don’t be afraid to ask questions. That will accelerate your learning. So the other strategy which I find is that along the way, as you become more senior, you should develop a sense of “un-satisfaction”. You should not be satisfied with where you are now. Continue to learn, like what the other speakers have been talking about. You anchor yourself with a core strength, but continue to build your breadth knowledge besides your depth knowledge. So this is important when you join an engineering company. And this is something which I have learnt along the way that I find is useful.

Prof Lim

Well, I think it’s quite obvious that the key thing to keep going is continuous improvement. I think this sense of continuous improvement is the key driving force, especially for engineering people, and I suppose for everybody. So after a lecture, we go back, we’ll start to think of how I can do a better lecture next time. And this is a kind of thing that keeps us going. No matter what kind of job, there are people who say that this job is boring. To me, there’s no such thing as a boring job. In any job, there are opportunities for improvement. And as long as you keep this drive then I’m sure I can do better.
I remember when I was a kid, we had no toys, we made our own toys. I used to make guns with elastics. And every time I finished, I had the best, I’ve an engineering mind from the time I was a kid. And my friend would say, your gun is very good, can I have it? I said, yes please. And he was so shocked. You know why? Because the moment I finished that, I knew I have the next model that’s better.

So when somebody sells you a F-16, you know they have a better one behind. So, that is the kind of things that I grew up with. Till today, I still maintain that. Whatever job I finish, I already have in plan, the next one, and that keeps me driving all the time.

**Moderator**

Although each of you are from different sectors, some commonalities do come up. I hear reflection, I hear continuous improvement, staying humble, keep learning, asking questions, and also to build on your core strength, and also to develop breadth as you go along.

**Chef Eric**

I think, for me, one thing that is very important is attitude as well. And then there’s one thing that you cannot ignore, and which many people may not realise, is on-the-job training. Even though every day you go into your workplace, you might be doing similar tasks, but I think every day you will learn something at work. That translates to your on-the-job training, you pick up something new, pick up some knowledge. Even if it doesn’t come your way, you should go and look for it. Then it makes you feel that your job is more meaningful. Because if you allow it to stagnate, and then it becomes a routine, you’ll probably end up dragging yourselves to work.

**Dr Goh**

To top up the breadth and depth, maybe I have a very interesting analogy. Imagine you have a carpentry nail, not the nails on our fingers. So, a nail has three parts. You have the shank, and then you have the sharp tip, and you have the head. So, if say a carpenter wishes to compress or wishes to combine, or bind together several pieces of wood, one thing that you need to have is that the shank has to be long. Your depth has to be there.

And then, the sharp tip means that you have to sharpen your skills before you can pierce through all the wood, before you can bind them together. And if you wish to bind as many planks as possible, would you wish to have a small head, or a big head? The answer is that you wish to have a big head. So therefore, your breadth is where the head of the nail has to be. And, in order to nail everything, you need to have a long shank, a big head.
Moderator: Thank you for the very interesting metaphor. I also picked up the importance of teaching others. When you teach others, you actually learn new things yourself. So these are some of the key strategies. The next question is: what has been most important, or even, defining, for you in your journey to mastery?

Mr Salahuddin: You never achieve mastery. The journey never ends. I have recently over the last few weeks been asking myself, so I’m pretty okay in the classroom, but am I? The students are changing, the culture is changing, does what I do continue to be as effective? I’ve been looking at new things that I can do, in terms of increasing my level of mastery, if you want to call it that. I just went for a workshop on thinking routines and it’s something that I want to develop further.

Not that I’ve not been using it, but I can do more, and do things differently. So you never really achieve mastery. It’s all about the journey. And as long as you are continuing to grow in that journey, I think that’s fine. You just get better, or more able, or more adaptable. You’re better able to adapt to the changing environment around you. Something else that popped into my mind as I was listening to some of the points made is this point about culture. When you ask your boss something and your boss says, “Why are you asking me?” I think as the more senior people in our organizations, we are the custodians of the culture.

And we want to have a culture of learning, so the way we respond, the way we speak to the people in our organization could actually influence whether they learn, whether they want to learn, or not. Professor Reid was just sharing about the use of narratives, and it actually struck a chord with me, because we do mentoring in our schools.

And one of the current directions in mentoring is, we don’t have the answers. The answers actually lie with the mentee, and it’s through the questions that we ask, through the collaborations that we do with our teachers, that the answers come through. So again, the kind of ways that we behave, will create that culture, and hopefully it’ll be a culture of learning.

Chef Eric: Let me just share this very interesting case study. One of the most straightforward questions that I get when I meet somebody and I introduce myself as, “Oh, I’m a cook, I’m a chef”, the next question that comes from the person will be, “So what’s your special cuisine, what do you cook?” And, for me, on the journey to mastery as a chef, if you were to just focus on one particular cuisine, and it’s even
worse if it’s not your own heritage cuisine, you end up only being a specialist, not a master. Because you only specialize in one area. A young apprentice asked me before, “Chef, if we were to go into so many different areas, don’t we become something like what we call, a jack of all trades, but a master of none?”

It took me a while to reflect on his questions and to give him the answers. I said “What is your profession? Your profession is a chef. A chef is not only required in any F&B establishment, chefs are required everywhere, in airline catering, in R&D (Research and Development) food science, in any business that is connected with food, whether you are in manufacturing or you are in a restaurant, F&B business or even in hospitals and healthcare, the chef plays a role.”

So my reply to him was that, you should be a jack of all channels, and a master of your own profession. You can’t be just a specialist if you really want to be a master, because every day you’re learning something, every day you’re going to do something different. And eventually, when the trade recognizes you as a master, you’ll be there to guide the next generation that’s coming up, and helping them. And you will get people in all different channels from the industry as well.

Prof Lim  I think, for me, it’s strange that the personality and the culture, or environment has to match for you to go through a journey to mastery. And interestingly, this requires a little bit of OCD (Obsessive-Compulsive Disorder), because OCD people are those who really can do an excellent job without caring what other people think. Of course environment must be supportive to allow you to do what you want to do. And if the environment doesn’t fit, you have to be a rebel as well. You must be prepared to break certain boundaries to do things. And that is the way for me, that we achieve mastery.

Ms Pushpa  For me, mastery is a journey. I think more importantly, being in the forefront, charting new territories is mastery. Mastery is gaining the skills, knowledge, exploring, experimenting, but setting the trend for what is going to happen, and bringing your team with you. Because if you are a solo master flyer, I think it’s very difficult, because like a shooting star, you zoom, and you go off. If you bring your team with you, it’s an entire generation that comes with you, and the sector grows. And for me, mastery is an on-moving journey, and the target moves. That only happens when you start to break new boundaries.

Moderator  Very interestingly, you mentioned it’s all about the journey, and it’s also about not just the personal journey, but also in terms of interaction between the individual, together with the culture that’s
in the organization. And Prof, you talked about the personality and culture must match, and Chef, you mentioned the difference between being a specialist, and a master, with a very interesting comment, to be a jack of all

Chef Eric  All the channels.

Moderator  …all the channels…but a master of your own…

Chef Eric  Profession.

Moderator  And I think, Pushpa you mentioned about teamwork, not only just your own personal mastery, but also to bring other people with you. And also, to have a concern about how the sector can grow as a result of your work. That’s very, very inspiring.

My next question is going to be about the future. The conference theme is “Future of work, Future of learning”. And your journey, as you alluded to is continuous, so it’s not just a place where you arrive; mastery is not a destination, but is a journey.

So, as you envisage the future, in the next three to five years, even though different sectors may look different... change is the only constant. Probably also the nature of change, the pace of change, may differ. But as you envisage, how work or jobs in your sector will change over the next three to five years. Would anything need to change for you in your journey to mastery?

Dr Goh  Maybe I should share some stories. GLOBALFOUNDRIES is where I come from. It’s a semi-conductor manufacturing company. Before I talk about the future, let’s look at what happened maybe one or two decades back. Five years ago, GLOBALFOUNDRIES was known as Chartered Semi- Conductors, before it was sold to the Middle-East, and at that time, the semi-con industry is actually a booming industry. The share price of Chartered Semi-Conductor is…twenty dollars.

And then, a decade later, and just before it was being sold to the Middle-East, it became fifty cents. You can see that the industry is moving very fast, it is very dynamic, and it’s highly unpredictable. So what happens is that if I look at the current situation, for the semi-conductor industry, it seems like the share price has dropped. And I hear many people telling me that, semi-conductor industry is a sunset industry. But if you look at the data, at the statistics, is it really a sunset industry? We have so many IOT (Internet of Things) coming out, wearables, your iPhones, your laptops, and of course, a lot of other
things in our life revolves around semi-conductors, integrated circuits. And, the consumption rate is going higher and higher, although the price is getting cheaper and faster. But the demand is always there.

Therefore, it can't be a sunset industry. But if you look deeper every industry, especially in technology, has something called the shelf life. So I would say that the semi-conductor shelf life in Singapore, is reaching the end. But it does not mean that the semi-conductor is going to die.

So, if you look at this trend, what has to change? If we follow the trend, if you wish to stay in whatever you are doing, then just to let you know that semi-conductors are a very big field, there are many different areas, but if you feel that your area is stagnant, it has reached a plateau, you should ask yourself whether you wish to be mobile, because semi-conductor shelf life in Singapore might be limited, but in China, in Taiwan, in Vietnam, it might be booming. So you have to be mobile.

Actually, looking at the future, what they call a VUCA (volatile, uncertain, complex, ambiguous) future, from the professional point of view as Chef Low has mentioned, you become jack of all trades. The whole scenario has actually changed. A good example is when I started off in the aviation industry, we were all focusing on making an aircraft reliable, making sure it doesn't fall out of the sky. All was totally engineering work. Today, I spend most of my time studying psychology. The psychology of people making errors which cause a plane to crash.

And you see, the shift is amazing. I spend most of my time teaching human factors and figuring out how people are going to make mistakes. And this is just an example. I'm sure in all other industries, you will see such shifts too.

For example, the computer industry didn't exist in 1968. Today it is the biggest industry in the world. When I was still working, the computer industry didn't exist, we were playing with it as a toy. ...So you can see in trying to predict the future with this kind of scenario, technology can actually change behavior, change culture. So we have to watch that whatever we learn, the fundamental must be still applicable. And science, engineering and mathematics will continue to be the driving force for whatever changes come along.

I think that regardless of which field you are in, the ability to say, 'what if', the sense of wonder, the ability to say that we take risks, we allow the people that work with us to take risks, and to explore. Nothing is
impossible, but we need to work to make it happen. The human factor, the disposition to want to try, the disposition to want to say, “What if we can do this, what if...” will help us think through for the future, not so much leading for the present, but leading for the future. And, I think those human qualities, traits that we have to have within us, and to also nurture our team, and bring our people with us. So, it doesn’t matter, in my opinion, it doesn’t matter which sector you’re in, these are very transferable human qualities that are critical for the future.

Mr Salahuddin: I teach biology, and in biology we teach evolution, and we talk about an organism adapting to its environment, and we say that the organism will never ever be perfectly adapted to its environment. Why? Because the environment is going to change.

And the environment in teaching is constantly changing now, we are talking about imbuing our kids with a lot more thinking ability, creative, critical thinking, values education. The cohort we are getting today is actually quite different from the cohorts we got a few years ago even.

So we have to actually adapt ourselves, continue to adapt, and change the way we teach, the way we relate to them, so that we can do our work, do our job and achieve our calling in a better manner. What those changes are, I discover new things and new ways to change every day. So, you have to keep persevering and trying to do your job better.

Chef Eric: I think I like the word adaptation because in every profession, even in the kitchen, there’s always technology coming in. So, the cooks have to adapt when technology comes in and replaces some of the manual tasks that they’re doing.

So the chef’s scope becomes more expanded. I mean you might be doing things like becoming operators of the machines, appliances, you become QC (Quality Control), you check on the production. Your job scope is enlarged, and no longer just cooking over a stove. And at the end of the day, how you adapt to the technology, how you learn new skills, you can take the job away from someone, but you cannot take their skills and their knowledge.

Moderator: To summarise I hear adaptation a lot, and be mobile, be flexible, also the importance of other factors like human factors, a sense of wonderment and a ‘what if’. I think all these are how you are making sense of what the future is going to be like, and also for yourself.
I would now like to invite questions from the symposium participants.

**Member of Audience**

As you are aware, there’s a big commitment now in Singapore, for career education. To help young Singaporeans make informed career choices. If you were the Minister of Education what would you suggest needs to happen, to help young Singaporeans make informed decisions about their careers?

**Ms Pushpa**

I’m not sure the Minister of Education is going to like this. I appreciate career counseling and exposure to the field. Many people enter a field having a very airy-fairy impression of what the field is.

And you get them to wash dishes, scrub the pan, clean up after puke, pee, will they still want that position, do they still want that field? So I think a practical hands-on experience, to understand what that field entails, what the job entails, is critical to making a career decision. The technical knowledge and all will come as you acquire them, but is your disposition one that fits the field? It is a question we have to help our young people find out themselves, that self-awareness, before they make their decision.

**Mr Salahuddin**

Essentially, it’s exactly that. We need our students to be more aware of what’s out there, really aware of the reality of what’s out there. Counseling of course, direct guidance and self-awareness, I think those are very important. Our students need to know who they are, or what they connect with, and that will then help them make their decisions moving forward.

**Ms Pushpa**

And also, a reality check. Many young people want to be the next senior manager in 5 years.

**Chef Eric**

Celebrity chef. We have a lot in our industry.

**Ms Pushpa**

Yes. And if don’t make it in the next five years, I’m doomed. No it’s not. If you want to be a master in your field, don’t shortcut. Get your goal step by step, let there not be large gaps that you later can’t fill, because you’ve lost the grounding.

**Chef Eric**

I think maybe just to add on, one of the key things the younger generation have to understand is that nobody owes them a living. That will take away some of the airy-fairy aspects of entering the profession.

And a lot less on the idea of self-entitlement. So even if you want to learn something, you have to earn it to learn, and not expect that you’ll be taught and given just like that.
Dr Goh: I'll provide another perspective. I feel that the choice of your career depends a lot on the global landscape as well. You should know what the global trend is, and you should know what is applicable in the current context. Say for example, in Singapore, I have my experiences of the past few years in the semi-conductor industries. You see that there are a lot of companies consolidating. What it means is that there will be job cuts. So this is very realistic.

So if I were the Minister, I feel it is important to inform the youths or students, of what the direction in the government will probably be in the next five years. I still remember when we went from semi-conductors into bio-medical, it was very fast. The transition was very fast. You know when you want to plan for a career, back in your college or university days, you need probably about four to five years, before you can plan what you really want to do.

And what you really want to do must be in anticipation of what is going to happen in the next five years, when you graduate. There’s no point to enter a career, whereby next five years you know it’s going to go downhill. And you have a lot of job cuts. And this is very realistic in the world. So, it is important to inform of what is really happening in the global trend and update and make it basic information for everyone, so that they can make a wise choice.

Prof Lim: I think from my point, are you asking the primary school Minister of Education, or the tertiary one?

Mr Salahuddin: There are two

Prof Lim: I prefer to address the primary school, because I think, at a very young age, we should learn as many things as possible, as broad as possible. So stay away from the competitive environment at the primary school level. Make sure there is broad education, have them study astronomy, study all kinds of things.

And before you bring them into our business education system, from very young, to focus on the job, instead of focusing on development of a personality. And I think as a Minister of Education, I would like to see more investment on teachers’ training and everything as a broad education for young people. Because, you can’t tell the future, what it’s going to be. So that’s the best way to ensure your future.

Member of Audience: I think it was Malcolm Gladwell who said it takes ten thousand hours of practice for someone to become an expert. In this day and age of increasing instant gratification, how do we build a culture of mastery, resilience, and craftsmanship?
I think this ten thousand hours is a well-known phenomenon. For example, we need ten thousand flying hours to be a captain on a commercial aeroplane. And I really hope they keep this ten thousand, because it is important at that level. And I’m sure in some industries, for example in the aviation industry, we actually make use of simulators, computer simulators, what we call ‘innovative training technology’ to substitute for this ten thousand, but there must not be over trade-off, in other words, it has to be properly managed.

And, I believe that there’s this thing called serious games in the future. Because if you can design a training package into a game, you have won the game straightaway, in education. I always wonder, all the kids are playing computer games, put a lesson into that game, and you’ve finished your job. So that’s a simple substitution of technology for training of skills.

So, we’ve to learn to separate skills and training, and education is quite different. I think the training part can be substituted, but I don’t think education…it’s a little bit difficult.

Takes many, many hours definitely, to become competent and expert in anything that you want to do. But it should not be mindless and repetitive practice, which is what actually tends to happen in school when we do a lot of drilling.

What’s important is that you practise, and then you reflect. So that you get better, or you learn from your mistakes, or you manage your emotions, having failed or not done so well. And then you practise again, so you keep leveling up, I think that’s important.

I think it depends on the context, now I’m not sure where the ten thousand number comes from. It sounds like Albert Einstein talked about ten thousand hours? Or ten thousand days, ten thousand tries in order to get the light bulb to work. So, you have to do things, I wouldn’t say it’s repetitive, but you have to keep trying.

No matter whether it is ten thousand hours, or ten thousand tries, you have to keep doing it. If you wish to reach mastery, there is no way to take shortcuts. You have to go through the process, go through the learning, go through the reflections, and then what you have at the outcome, is something that’s resilient. And if you go for instant gratification, or just taking shortcuts and making something work, it might be a quick-fix, but it might not be a long-lasting thing.

I think if you talk about ten thousand hours, chefs have no problem
clocking that, given the kind of hours that we work every day, twelve working, sixteen hours, I think we probably hit it faster than a lot of other trades.

But the question is, how did you spend these ten thousand hours? What did you take from there, what did you learn, what did you do in these ten thousand hours? You could have worked in this profession, up to that amount of time, but if your mind is closed, you’re not adventurous to look for new learning, then the time spent is not really justification of you becoming a master.

**Moderator**

I think that’s probably all we have the time for. But I’m sure you will agree with me, we want to thank the panel for giving us a glimpse of their journey to mastery, as well as giving us insights into how we can develop mastery. Please join me in thanking the panel.
Emcee  We’re here for the final panel of the symposium. Join me as we welcome our Chief Executive (CE) for SkillsFuture Singapore and MOE’s Deputy Secretary for SkillsFuture, Mr Ng Cher Pong, to be joined by Professor Stephen Billett, Professor Hazel Reid, Professor Ewart Keep, Associate Professor Steve Wheeler and Professor Emeritus Rich Feller. Ms Renee Tan from IAL will moderate the session.

Moderator  Thank you. Good afternoon, ladies and gentlemen, and welcome back to this very last session of our symposium. I’m very pleased to have a very distinguished panel of speakers. And we’re going to forward the conversation on the main theme of this symposium, which is ‘Future of Work, Future of Learning’. So it’s going to be a very dynamic conversation. So maybe I’ll start with a question. So we’ve heard so much about change, the future of work, the future of learning. How can we plan to embrace this change, to embrace this future of work and future of learning? Let’s give each of you a chance to do this in a very, very quick summary so that we can take questions from the floor. Shall we begin with Professor Keep?

Prof Keep  Okay. I think traditional models of skills planning, where you forecast how many students you need in exact numbers, and then you try to match it with the exact output of the same number. Those days, at least in areas where change is happening a lot, are going to be completely redundant. But I do think planning still matters, in terms of indicative planning, or trying to forecast where growth is going to happen, where new skills and skill needs are emerging, and trying to get providers of all different sorts to reflect on that, and to work out what they’re going to do to start meeting that need.

I think the other thing is that it’s not just the subject; it’s also about the level of training and the broader base, more transferable forms of skill, and it seems to me that all providers need to reflect all the time on what their clients need, both in terms of what the students need for their long-term career goals and what their employers need in terms of having a workforce that is adaptable.
Moderator  Great. Okay, that’s planning at a very high level. How about in terms of career, Professor Reid?

Prof Reid  I think for practitioners, there needs to be attention to change in terms of their own practice, and what we do if we are going to be the people that students, clients, adults come to for support. Then clearly we’ve got to be able to provide what they need. So it’s certainly, within the UK, it’s taken quite a seismic shift, I think, for practitioners to change their practice. Part of the problem is having the space in busy work lives, I think, to practise new ways of working. That’s something that is the responsibility of individuals but it’s also the responsibility of employing organisations.

Moderator  Professor Wheeler? You agree?

Prof Wheeler  I would say exactly the same. The thing is, organisations need innovation. Without innovation… It’s like a shark. A shark has to go forward, otherwise it dies. It always has to have the momentum. It’s the same with any organisation. You have to move forward. And for me, invention is not enough. Invention is one thing. Invention often requires creative individuals, whereas innovation requires communities, and I think the important thing is that the communities of practice or the community of interest, the organisational, critical mass of people has to be able to push that along together. I think organisations need to make that space, as Professor Reid already said. It needs to be something which I think is paramount to most organisations.

Moderator  Great. And Professor Billett?

Prof Billett  I think we need to be careful about predicting what’s going to happen in the future, and a lot of the discussion here has been about the inevitability of change. In 1971, when I was doing my college education about garment manufacturing, I was told that very soon garments wouldn’t be sewn, but in fact garments would be welded. I remember that. So there would be no need for a clothing industry. The machine would be different, et cetera. But two things happened.

Firstly, the technology to weld was never successful. As I’ve sat down on this chair, for every inch of the back seam of my trousers, I’ve exerted 30 pounds of pressure. And the stitches which hold it together, it has 14 inches of cotton for every inch of sewing, and that has been far more better than welding technology. (laugh) The other thing that occurred was that to weld garments, they have to be made out of plastic, and people don’t want to wear polyester. People want to wear cotton. So this huge mooted change didn’t happen.
But also, when I was doing my teacher education...this was in 1982, I was told that the biggest challenge for me as an adult educator in the future was how I would manage and assist adults to spend all of their leisure time. Now, I don’t see too many adults having difficulty with leisure time, but I find adults have a lot of problem with trying to find leisure time.

So these predictions don't play out. So on the serious side of this is what I've seen in...particular instance in Canada, this huge investment was made in the vocational education system there to support computer manufacturing. No huge investment was put to train people to make the computer components, and very shortly after, the company transferred to somewhere far away.

So changes will manifest themselves in different ways. I don’t see too many people who predicted the rise of ISIS and the demands that has taken and the way that has changed the world in which we all live. I don’t see too many people predicted that. So I think being open is important. In terms of our work, I think it’s important that we have principles and understanding broadly about what we do. As I said, we also have procedures which are open to change, rather than it being very narrow.

Moderator  Okay, thank you Professor Billett. Professor Feller?

Prof Feller Yeah, I was thinking about two issues. One is we need to get back to understanding principles on entrepreneurship. Each one of us is really an entrepreneur who temporarily has a job or is a consultant. We need to think like an entrepreneur, always assessing, looking for, considering and adding value, understanding what are the problems that need to be solved. So I lean toward, how am I acting like an entrepreneur? I want to be my own company, in a way. I think that’s one thing I would say.

The second thing is that regardless of the forecast of what’s available and how rich they are, what really matters is your access to social capital. Who do you know and who knows you and the power of social capital really taps into privileged information, because information as a value is often protected by those who can control it. So I think... the rule is for all of us to think about, how do we find information in our local communities? And are we tapping into people in the different sectors?

So we expand our circle of friends and don’t just hang with the writers of the labour transfer, but understand where jobs are being created.
So I think all of us would be wise to maybe lean toward understanding economics a little bit more, and maybe a little bit less about psychology.

Moderator  Thank you. CE?

CE  Maybe I could just add my thoughts to that, that I think it’s quite clear that with the changes, the pace of change that’s happening, with the disruptions that are occurring to business models, quite difficult to forecast very, very long-term. It’s quite difficult, and that’s why attributes like openness, adaptability become much more important. But that doesn’t mean that we give up on planning altogether, which I think is Ewart’s point.

It’s important to do planning, right? It’s important but it’s just that the time horizon has to be adjusted. We need to have a good sense, next three to five years, what we’re looking at, what are some of the broad driving factors that will change the landscape that we are in, how that will impact us and the space that we are in and how we adjust accordingly. I think that’s why there’s been a fair amount of effort across different sectors, including the Sector Transformation Plan we launched yesterday, to give some sense of where…over the next few years, where we see some things evolving.

Clearly, that’s not going to be the end state. The pace of change we’re not able to predict as well. But what we do know and what we can sort of prepare ourselves, is that if these changes are going to take place over the next few years, how can we position ourselves for these changes? And if we continue to be adaptable and open enough, we will be able to continue to evolve.

Moderator  Okay. Can I take questions from the floor, please? Anyone? Yes, gentleman at the corner there.

Moderator  Hi. Identify yourself please.

Member of Audience  Johnny here. Johnny Yap. I have the privilege of listening to real cases of successful companies that have implemented workplace learning, such as DBS, Mr Gupta and Rohei. Rachel just shared with us this morning. But if we take a closer look at how these companies are successful, we notice that it is a culture that is supported by not just the middle management, lower management, but it is by the C-suite, the senior management.

The question is, how many of such companies exist? In other words, what can we do to encourage or even compel the C-suite
level to be aligned with the middle management and the lower management? There is no lack of programmes right now to address the middle management and the lower management, but what about the C-suites?

Because as long as there’s no blessing from the top, you will find that whatever that we are doing at the middle management and lower management is not going to work very effectively, because these guys are just going to learn something, go back to the workplace, attempt to implement something, only to be told not to be too smart.

Moderator Okay. Thank you, Johnny. Do you see this as a problem in Australia, Professor Billett? Not having the support of the highest level of management in workplace learning?

Prof Billett Yes. I mean, I often describe the vocational education system in Australia as being an immature system, compared with that of Europe, where you have a greater social contract that goes on between capital and labour, and there’s greater concerted effort to support vocational education system. Earlier, in another session, I was referring to the German concept of … the Beruf concept, which is a societal sentiment, which means that support for the vocational education system is distributed so that companies have to provide good training for apprentices.

At the same time, apprentices accept a very low wage. A final-year apprentice in Australia earns something like 70% or 80% of the adult rate. A final-year apprentice in Germany gets about 20% to 30% of the adult rate. The parents of those apprentices then sponsor their children through their apprenticeship because they know their child will get good training.

Consequently, it’s a societal sentiment. One of my colleagues from Switzerland says that in a small town in Switzerland, when somebody becomes a meister, that is somebody who’s qualified then to support apprentices, it would be celebrated in the local newspaper. It would be known about. He said, “If somebody got an MBA, it wouldn’t be.”

So when you have a societal sentiment which supports skill development, it becomes a collective project. The companies have to provide good training and support that. Parents support it, young people take low wages. So it’s that kind of thing which I think is a good goal to work towards. In my own country, I often sense that we don’t have such a mature system.
Moderator: Right. Professor Keep, you agree that we could work towards that?

Prof Keep: Yeah. I mean, in the UK, it’s certainly a huge problem. Many UK organisations, their senior management team are not all that concerned about the long-term because there may be no long term. They may sell the company to someone else and use the money to buy something else. So portfolio management models, there’s very little long-term commitment, and so what you get is just in time, just enough training. Often that leads to actually, “What’s the least we can get away with?”

Companies are often very hollowed out in terms of their skill profile, so when change happens, they quite often can’t cope with it and they collapse or they get taken over by someone else. I think Professor Billett’s absolutely right. It’s about a society, perhaps a government that places expectations on businesses about their long-term place within the economy and society and their responsibilities.

I think the other problem is that in Anglo-Saxon countries, there’s enormous pressure to have a kind of short-term profit maximisation model, and if you follow that, then I’m afraid training is a luxury. Training usually only really pays and matters if you believe there is a long term. So I think time horizons really are a key issue.

Moderator: CE, is there a way for us to grow this culture in Singapore, of having top management take on the responsibility of workplace learning?

CE: Well, I think my view, having looked at systems around the world, the first…the German-Swiss-Austrian systems took hundreds of years to build up. So it’s quite deeply engrained in the culture, and in most Anglo-Saxon societies, we don’t quite have that same culture and it does require a lot of effort. One of the key takeaways is that for such a system to work, companies must see value in it. So part of it is time horizon, but the overall equation must make sense for the companies.

Companies must see some reason why they would want to invest and build skills, build manpower, rather than to just take a plug-and-play approach, where they just recruit from the market, poach from their competitors and do it differently. So I guess…and that’s something that we will need to work hard at… we may sometimes have to make it explicit for companies, to say, “Well, actually why does it make sense for you?” What makes sense in one sector may not make sense in other sectors. What makes sense for a large company may not make sense for a small company.
So these are, I think, the different dynamics at play here, and that’s what makes the culture so difficult to build. But that doesn’t mean we don’t start. I think we do need to start and we’re making an effort here, doing different things, trying out different things. I’ll be the first to admit that I don’t know whether all the models that we try will succeed, but what is clear to us is that certainly we don’t go on a fixed model, right?

We need to work the model, work the programme, such that it makes sense from the company’s perspective. If it doesn’t make sense from the company’s perspective, no company will adopt it, regardless of the incentives that the government puts on the table.

Moderator  Thank you. Let’s take another question, shall we? I have a question on the iPad, but it says, “How will SkillsFuture Singapore (SSG)” I think it’s addressed to you, CE. “How will SSG transform pre-employment training to meet the needs of future employment workers?” I think it’s the alignment.

CE  That’s right. So maybe I can come in for that. [laughs] Unless any of you guys want to take a shot at it. Well, I think for SkillsFuture Singapore, this is our second month in existence, right? I mean, we have set up primarily to make sure that we bring together that integration in the overall education and training landscape. So what we will do, as Renee said and the pre-employment training, is more to make sure that there’s that strong alignment with what we are doing and what we call the ‘continuing education and training piece’. And there are different parts to it, right?

Some parts of it will involve the interfaces with polytechnic, ITE education, with university education. But part of our work will also be in education and career guidance, which is extremely long-term because it involves mind-sets. I think we’ve heard that talked about many, many times, where one of the biggest changes that we try to drive is actually mind-set change under SkillsFuture.

How do you get employers to change? How do you get individuals to think differently about skills, their careers? How do you get training providers and society to think differently as well about skills? And some of those things, we do have to go upstream, we do have to start young and start early and involve parents as well.

So that is actually one big piece that you will see us being involved in. I think the plans are still being worked out since we are only in our second month of existence, so do bear with us. But that’s clearly the intention, right? That you do want that integration across the whole value chain.
Moderator  Professor Reid, how is pre-employment training bridged with continuing education and training in the UK?

Prof Reid  I’m not sure I know what pre-employment training is.

Moderator  Well, schooling.

Prof Reid  So, I mean, in schools in UK, we used to have a very good work experience programme, where students in Year 11, so age 15, let’s say, would have a period out of school, and that was preceded by something which was called the TVEI initiative, which was fabulous. Unfortunately, a lot of these things change with change of governments, with policies. Then the focus changes, and currently work experience in school is very minimal, and it’s not doing the job that was very much appreciated, I think, by schools. So UK is no longer somewhere that…I would say this is well done.

So if I can take it off on a slightly different...because it was something about the previous question. For in terms of change and how you get people to think about career development, and whatever practitioners want to call themselves, and we could have three hours discussing what to call ourselves, then everybody will fall asleep. So we won’t do that. When I was first a careers practitioner, the first school I worked in was in a very disadvantaged area, to use that language, and teachers were so hard-pressed. They hadn’t got a clue what I did, what was I for in the school. In the staffroom, I was a bit like a hole in the floor, in that something to be walked around at all costs. So you have to put yourself about a bit, whether you work in a school or a university, if you’re in private practice. People don’t really know what this career... They think you find jobs for people.

So you do have to put yourself about a bit. You have to let people see the value of the services that you can offer, but then also it has to be tailored to what people’s needs might be. So I have a colleague who’s an independent practitioner, and I said to her, “What do you call yourself?” She said, “It depends entirely what it is I’m doing. Sometimes I’m a career consultant. When I’m working with people who are stuck, I’m a career counsellor. Other times I might be a career coach, et cetera.”

So it’s not the career practitioners who can say, “This is what I do,” or expect people to come to them. You do have to...I’m trying to avoid the expression ‘sell yourself’, because that’s not quite what I mean. What do I mean?
Prof Keep  Promote
Prof Reid  Promote yourself! That sounds so much better.
Moderator  Great. Professor?
Prof Wheeler  Perhaps I can also come back to the previous question as well because I think although we’ve answered it in many different ways, there are still areas that we can excavate, and what Professor Keep said earlier on, I think resonates with me. The idea that learning and development should be just enough and just in time, but I think I can agree with him further than that. You can personalise it. It can be just from e-learning as well, and this, I think, is one of the areas that we are lacking in in most organisations.

How do we get employees to have personalised learning, learning which is totally just for them? I think lots of organisations shun that because they think it’s too expensive. They cannot see the return on investment for that, and I’m reminded of a story of two managers that were talking. Probably apocryphal, but nevertheless, it’s a good story because it illustrates the point here, and the two managers were talking and they were talking about how expensive learning and development was in the department.

One said, “What if we train them all up and we spend all this money on them and they leave?” Then the other one said, “Well, what if we don’t and they stay?” [laughter]

So the interesting thing is that learning and development, if it’s focused and if it’s personalised and if it’s just in time, it pays off later on, and an organisation has become stronger because of it. The other thing is, when organisations become large, they become more hierarchical.

So back to your question, Johnny, about how do we overcome this kind of hierarchical problem? Well, in every organisation there’s always an IPD, (laugher) an innovation prevention department. You know the one I’m talking about? It can be a PR department, it can be…it could be your human resources or it can be IT. Somewhere in this, somewhere, is somebody trying to prevent this kind of things from happening.

But also there are people within each organisation who…we call them ‘positive deviants’. They are people who do things in a slightly different way and they get really good results! They may even be breaking the rules in some way, but I would find those people and sit down with them and learn from them because that might be the start of something really good and something new.
Moderator: Yeah, sure. Professor Feller, you just completed your keynote and it spoke about the...blend between academic and career in a new workplace. So how in America, which has a long history of education and career guidance, how is this bridged? The jump from school to work.

Prof Feller: I think some economic conditions are causing people to think about things differently. We have a couple of key issues. One is the cost of entering training is getting higher and higher. So the closer you are to poverty, the more debts you have to take on to access any kind of training. Or if you are impoverished from any kind of access to social capital, it’s really difficult to make that piece. The cost of entry is very high, the indebtedness is certainly significant. So I think that’s an issue.

The other part is what I think we call ‘reverse transfer’. The number of people who have Bachelor’s degrees who are coming back to community college or technical schools is really increasing, and I think that’s a very good sign. As I was trying to listen to our many wonderful conversations here, I tend to believe that you need both liberal arts education and vocational training, and when you get it doesn’t really matter, but you need both.

We’ve kind of dichotomised, you’re going to go this way or that way. I think if you look within ourselves, I wish I was more liberally educated so that I could be discussing more policy issues. But I’ve had to go back to learn tactical skills to run a business, and I think most managers on the floor will tell us, “Send me somebody trained to turn the wrench tomorrow.” But if you talk to the CEO, they say, “Give me liberal arts-educated people,” because that’s where their head is.

So I think we have to understand who’s giving what advice for what reason, and I would just contend that we really need to pay attention to the cost of entry for training. A little story. My son... just got his Masters degree in basically big cloud and he works for the National Basketball Association, and that’s very hard to get into for a person his age. But we have subsidised his learning, his co-curricular activity for years - sending him to expensive conferences, making sure he’s at the right meetings, doing internships.

In America right now, we have people do internships for no return. An internship cost is greater, so that it’s often put under the parents, so that people can accelerate. So the cost of entry is something that we cannot forget about, and I think that’s why only when you dichotomise an economy, and have more people with more and more with less, can it alleviate people’s access to training.
Okay. Yes, talking about the cost, we have a very interesting question on the iPad. How can we recognise and incentivise more informal learning within our existing regulatory mechanisms? For example, SkillsFuture Credit can only be used for formal training programmes. Perhaps CE you could take that first, and then we’ll go on to what the other systems do with informal learning.

Yeah, sure. Well, I think there is room for us to recognise informal learning within organisations, but I will make a distinction between recognising the learning for the purpose of progression, for the purpose of building on to that learning, which is slightly different, I think, from when you talk about funding schemes, training programmes, et cetera. Because that is a lot more complicated because when you fund on a certain basis, then you’ve got to ask yourself, “Well, if you are now thinking about funding informal learning, how do you structure a scheme to fund some of these things?”

So I will actually put the two aside, in that I think what we want to push for is really to recognise that there are many different forms of learning, formal, informal, where you could learn from your peers, your supervisors, et cetera, and you want to be able to build on that learning. So one of the things that we have been pushing…and I think many of you will be familiar with these, are things like recognition of prior learning, assessment only pathways, where you enable individuals to build on the learning that they’ve acquired in different forms.

It doesn’t necessarily need to be in the classroom. Doesn’t necessarily need to be in a training institution. Doesn’t need to be structured, formal. But as long as you have the skills, as long as you have knowledge, find some way to recognise it so that it enables you to continue to build on it.

Yes. Okay, informal learning. Professor Keep, in the UK?

Well, I think I suggested this morning that there’s quite a lot you can do to boost the amount of informal learning in the workplace that wouldn’t necessarily cost huge amounts of money. I think the key thing is to build capacity within the workplace so that people have the knowledge, the skill to actually think how work can be structured in ways that will provide staff, employees with the kind of challenge and feedback mechanisms that will allow them to learn on the job.

I think with SkillsFuture, you’ve got to start somewhere and starting where you are makes sense. You can see how that goes on and then think about the future. The one thing I’d flag up is that we’ve got to think…a national foresight unit, which looks at long-term
horizon scanning, and we’re currently doing a piece of work on the implications of an ageing population and lifelong learning. One of the key messages is that there’s a lot of research, growing body of research, which suggests that giving people who are retired better opportunities to engage in lifelong learning has major health benefits for those elderly people, particularly in staving off dementia and also some other things.

So I think in the longer term, we are going to have to think very hard about how we encourage people who are no longer in the workforce but may still be citizens for quite a while to come, to actually keep on learning, for their own health and wellbeing. Actually, if they remain healthy, then we may save ourselves a great deal of money. So there is actually a financial economic reason why we might want to do that.

Moderator  Yes.

Prof Feller  I would say I applaud exactly what you said. Harvard just…they have a $21 million programme in positive psychological wellbeing, because they know with the demographics in the US, unless we keep people engaged, there are so many markers that suggest they’re going to struggle and be a healthcare burden. So the whole notion of psychological wellbeing is really critical and being researched, I think, pretty aggressively in the US, because we can’t have a society full of older people who sit around and don’t feel engaged, don’t feel connected, don’t feel fulfilled or live a life of purpose because they soon become a health problem.

Moderator  Okay. Let’s take one more question from the app. This is an interesting one too. The speakers have shared about lateral progression. How long should an employee be progressing laterally before looking to progress upwards, keeping in mind that there are limited positions at the top? Who would like to take that?

Prof Feller  Learning is lifelong, learning is life-wide, isn’t it? So there’s no end to it essentially, and this goes back to the previous question. It’s still about informal learning, a lot of it, isn’t it? We should be promoting informal learning in all its measures, in all its dimensions. There are logical solutions to this, of course. No one has mentioned yet massive open online courses, MOOCs. This is a huge opportunity for everyone.

You know what MOOCs are? If you don’t, then I’ll explain very briefly. They’re online courses which are offered for free by most organisations and most universities now. So Harvard, for instance, has many, many… So does Oxford. Has many, many massive open
online courses available, and you work your own way progressing through the materials, at your own pace usually, and at the end of it, you don’t get any accreditation unless you pay for it.

This is the business model. It’s back-end loaded. But the idea behind it is that you can informally learn on any subject you like, and going back to this question here… Sorry, you’ve changed the question on the screen now. Trying to baffle me with science. But yes, it really is one of those ways, I think, that organisations can promote this kind of informal learning as well.

Moderator  Right. Okay, the question has changed and it’s gone to…with regard to career counselling, how can we change the mind-set of parents? This is a very, very Singaporean problem. How can we change the mind-set of parents who have a great influence on career choices? Many parents still have traditional mind-sets of success and equate that with academic achievements.

Prof Feller  I want to take this differently because I try to study sociological class issues. I think in America, one of the reasons you want your person, child, to go to a special school or private school or Ivy League school, is because of who they sit next to. I think it’s not so much where you go anymore; it’s what you do when you’re there that really makes a difference.

But we have this belief that if you’re an academic or if you have academic credentials, that you’re going to be surrounded by other people who have that mind-set, which I think is true, which often correlates with social capital again, and also zip code and access to privileged information. So I tend to be one to say, “Let’s study more about what you do when you get there rather than where you go.”

I am greatly concerned about the indebtedness of people when they pay for out-of-state tuition, to private schools and they go into great debt, when in fact their tax dollars have really supported local colleges. I find that there are just great people in every college if you want to be motivated to learn. So I try to be preventive about that and say, “Why are you going out-of-state? Why are you spending so much money to go to these top schools, when in fact you might want to think about how you can cut your losses upfront to allow you to spend more money maybe in graduate school when you know what you want to do?”

I just am very conscious increasingly of the belief that academic is better than vocational. I think it’s a rather elitist perspective and I think
the question again is to be mindful how important craft workers are and technical workers are, and then recognise that they need to be taught to own the business. I have so many friends who are academic … in debt because their children went to top schools but never got internships, never got experiences, and I think that’s problematic.

So I would say I’m just trying to be devil’s advocate to say, “Why are you going there? What is it going to cost you to go into debt? What does it mean to you?” because the training costs are so expensive. I’m a great advocate for community college and local schools. But the problem is we’re all afraid our young people will sit next to other kids that don’t want to learn, and then get into bad habits.

Prof Reid

My view is in terms of parents and career counselling that they’re actually a resource. One of the things that we shouldn’t do is think of them as the enemy, because research tells us that parents remain the single biggest influence on people’s career choice, if we’re talking clearly about young people.

My own experience as a practitioner is that if the parents can be involved in career development activities, but also if they attend the interview, provided that you’re very good at making a contract about who’s doing the talking here, i.e. the young person, then normally they enjoy the experience. They’re there because they want to support their young person. They’re there because they can offer resources, whatever they might be, to help things to happen.

So I’ve always said with students that you treat parents as a resource, and once they see the conversation developing and see their young person beginning to talk about themselves, normally they behave. If they don’t, there are ways of gently persuading them about who this conversation is for, and there have been times when I’ve had that conversation and then seen the young person afterwards. They are an influence but they’re also a resource. So don’t treat them as the enemy.

Moderator

Yes. Professor Billett, do you think that the coming together in Australia of the academic tracks and the vocational tracks actually works in influencing parents’ choice?

Prof Billet

Parents only want to do the best for their children.

Moderator

Sure.
And if the message out there is that this kind of occupations are the ones which are clean work, well-paid, most secure, it's not surprising that parents are going to pursue those as goals. It comes back to, I think, the way that occupations are represented. If you look across human history, we find that the valuing of occupations has been advanced by aristocrats, theocrats, and in more recent times, by bureaucrats.

There is precious little done that actually evaluates the work of occupations of different kinds. So we make assumptions about the worth of different occupations, and that then becomes a self-fulfilling statement within society that people are driven towards. When you do analysis, what we find is we’re surprised. We’re surprised, for instance, that the kind of problem-solving that is undertaken by different levels of occupations and by people at different levels of education achievement, are not as great as you might suspect.

So I can understand why parents in an increasingly competitive environment are hesitant. My daughter is going down the arts route and that causes me some concerns, when she could do medicine, for instance. So in terms of being the worst enemy... Yeah, so my daughter’s taken her own track. So it's a hard choice because parents want to do the right thing by their children. So if the messages coming through, the particular occupations are seen as being particularly clean, well-paid and longstanding, that is being rehearsed by parents and their concerns.

Hence, I think we need to stand back and look at occupations, and I think that we need to develop different approaches. Now, in terms of the societal sentiment, such as the German Beruf concept, I mean, this doesn’t come from within Germans because they’re Teutonic and it’s in their genes. It comes from a societal movement; the movement in the Nordic world that had led to a particular quality of working life.

They came from countries that were abjectly poor, and then went through a period of economic development, and decided that rather than have a contested relationship between capital and labour, that capital and labour should work together to have a better life for all of those people in those countries.

And that has led to a particular set of policy settings and engagements and they have a concept in Norway, where you don’t show off, and students’ marks aren’t released. There’s no competition, and that then leads to a sort of more cohesive society, I think.
Sure.

And I think it’s government that has to have leadership in these things to try and bring them about to value skills and to value different kinds of skills, not just those that are sitting at the top of the occupation hierarchy. By the way, my country, we’re now facing a situation where medical students are no longer guaranteed employment because there’s been so much pressure on increasing the number of medical students.

I was actually called on to a ministerial committee because we have a crisis. Not every medical student will get a job as a doctor. Where’s all the committees that are concerned about nurses, engineering workers, other kinds of workers?

But all of a sudden, medical students might not get a job and this is seen as being a societal crisis, which again is the rehearsing of this, that some occupations are far more valuable than the other. I think we need to stand back and look at that one.

Great. Allow me to wrap up with asking everyone for a personal take. Very quickly, what are you most looking forward to in the future of work, the future of learning? Professor Keep.

I’m looking forward to a world where more workplaces offer even greater learning opportunities. I think that can be done at low cost. I think it can be done relatively easily and I think it would enrich the organisation’s future and the working life of the people who work in that organisation.

Great. Professor Feller?

I believe we’re seeing a workplace where you can’t separate work and learning. It’s inseparable. This here allows me to have a hard time separating work, learning and play.

Yes. Professor Reid?

Well, Ewart and I are the only two people in the room that have a dumb phone, but there we go. What I’m looking forward to, I think, is … organisations paying more attention to work-life balance and not paying, perhaps, lip service to it.

Ah, yes.
Prof Wheeler  Well, I like the idea that work and learning and play go together, and I think more organisations should follow, perhaps, the lead of people like Google who allow their employees to play and have these moments when they can tinker and experiment with things and fail like the DBS, but actually be rewarded for that because you’re actually doing things new and different and trying to find out what the breaking points are.

Moderator  Professor Billett?

Prof Billet  A greater percentage of the population has their occupation as their vocation.

Moderator  Okay. CE?

CE  Well, I look forward to when…as a society, as a country, we place skills as the centre of our conversation and our narrative. Where work and learning really blend together, and where there are opportunities for everyone. So people can make choices based on their interests, their strengths, and they will find that the pathway, in the pathways that they choose to pursue, that there are no dead ends.

Moderator  And on that very positive note, ladies and gentlemen, please join me in thanking our very wonderful panel.
DISTINGUISHED GUESTS AND SPEAKERS,

LADIES AND GENTLEMEN,

GOOD AFTERNOON.

1. The 6th Adult Learning Symposium 2016 has been an enriching and fruitful journey. Now that we are at its close, I would like to thank all of you, both speakers and participants, for making this event such a resounding success.

2. We stand at the cusp of major changes to the world of work. Disruptions abound across sectors. Business model transformation has accelerated. AirBnB and Uber are examples of how the growth of the sharing economy has enabled them to disrupt the hotel and taxi industries respectively. They did so by allowing costly assets to be shared and monetised. But business disruptions have also occurred when businesses operate at the eco-system level, with prominent examples such as Apple, Alibaba and LeEco coming to mind. They offer products and services across diverse categories, and align their offerings to increase their competitiveness and extract even more value from the eco-system.

3. We also increasingly see chat bots being deployed to replace customer service staff to answer routine queries, and autonomous vehicles will do likewise for drivers. These are examples of automation substituting specific tasks that were previously carried out by workers. This is not new – and dates back to the industrial revolution. But even the Luddites in their wildest dreams would not have been able to foresee how far we have come three centuries on.

4. The rise of the gig economy is another factor in this equation. According to the study by McKinsey’s Global Institute on “Independent work: Choice, necessity, and the gig economy”, up to 162 million people in Europe and the United States—or 20 to 30 percent of the working-age population—engage in some form of independent work. This affects how work is increasingly being organised and structured.

5. Learning is also changing, driven in part by changes to the world of work, and in part by technology. A lot has been said about it by speakers over the past two days. So I will not repeat them.
6. Changes to both the Future of Work and the Future of Learning have far-reaching implications, including for the Training & Adult Education (TAE) sector. This is why we developed the TAE Sector Transformation Plan (TAESTP), which the Minister for Higher Education and Skills unveiled yesterday.

7. In an economy that is rapidly restructuring and with emerging skills requirements driven by new technologies, the heightened importance of re-skilling and up-skilling will create many more opportunities as the TAE sector expands. This is particularly so, in light of the national SkillsFuture movement. But just as in many other sectors, the growth opportunities for this sector will not come from doing more of the same. Some of you may ask what these new growth areas are for the TAE sector – and how training providers and adult educators can “re-position for growth” as outlined in the first thrust of the TAESTP. Let me use this opportunity to elaborate on this.

8. We see four broad shifts in the TAE sector. First, corporate-driven training used to be the dominant driver for the market and will continue to be important, but there will be a better mix between corporate and individual-driven education and training. More PMETs will be better equipped to take responsibility for charting their own learning and career pathways. At the same time, career switches will become more commonplace - while employers have important roles to play in enabling such switches, these will also be shaped by individual decisions and choices. Training providers will therefore have to decide whether or not to enter this market, and if so, how to serve it well.

9. This is a non-trivial shift. Individuals who decide to sign up for a programme are usually much more committed to the training – as they are paying for it on their own, and often attending such programme comes at the expense of their other personal and family commitments. But the training administration to support such individual sign-ups is also more onerous. Some of you have experienced this at first-hand when you entered the market for the SkillsFuture Credit earlier this year. For SkillsFuture Singapore (SSG), what is clear is that making available information on training outcomes will become much more critical. Corporates, especially the larger ones, are able to collect information on training outcomes on their own and assess them to make informed choices on suitable training providers and courses. But it is much harder for individuals to do so. So we will have to facilitate their decision-making processes in order to enable this segment of the market to grow.

10. We are also piloting a training management system that can be scaled up and made available to all training providers as SaaS (software as a service). This will make it easier for those that prefer not to buy their own system and get subscription based on pay-as-you-use to this national level system. It will likely be much more cost-effective.
11. Second, workplace learning. Learning at work will increase in importance, as the traditional line between study and work, as distinct phases in an individual’s life, blurs. Increasingly, workplace learning will complement learning at training institutions and in classrooms. And workplace learning will take different forms, for example OJT, mentoring by supervisors etc. It is most effective when learning at the workplace and at training institutions is integrated. Companies especially SMEs may also require support to build up their capacity to deliver workplace training. Training providers should consider how to play a meaningful role in this.

12. We will identify opportunities for training providers to be involved in this, such as expanding the Earn & Learn Programme to private providers beyond the polytechnics and ITE. IAL has also developed the Learning@Work portal which contains resources and tools developed to support professionals and enterprises in workplace learning diagnostics and pedagogies. Besides the online portal, IAL’s learning specialists have spearheaded various programmes to help organisations drive authentic learning at their workplaces. For example, The Ascott Limited, one of the world’s leading serviced residence operator from Singapore, has partnered IAL on a “Leading through Coaching” programme over a six-week period for their guest service staff. The intervention programme, which was conducted at their premises, has reaped fruits, as staff become more motivated and empowered at work and as communications has strengthened between staff and supervisors. Most importantly, it has led to better customer satisfaction. Again, drawing from IAL’s experience, this entails a shift in the operating model for training providers that are keen to expand their businesses into this new area.

13. Third, technology-enabled learning. I have spoken at length about this on other occasions, so I will not elaborate on this again today. Instead, I will like to reiterate how much blended learning has grown in importance. This is why we rolled out iN.LEARN 2020 with one of the key focus on this. Under the plan, we built iN.LAB, which is operated by IAL, to catalyse the adoption of blended learning, and we have seen good progress being made. For instance, our media production rooms now enable users to develop video and multi-media content for courses. Another highlight is the proof-of-concept of the Total Online Learning Solution project, which provides an integrated platform to design, develop and deliver e-learning programmes among other capabilities. Eight organisations have participated in this proof-of-concept project, and we are looking at expanding the involvement.

14. IAL has also been organising the “Innov” series at iN.LAB. Every activity in this series is centred on a key stage in the open innovation process, from ideation to development and prototyping. InnovPlus, for example, is an exciting platform where organisations with learning issues work with solutionists and technologists to create
learning innovations. In our inaugural run of challenge, three teams have won a prototype development grant of up to S$200,000 each to develop their projects further. The next InnovPlus to be held later this month will see eight new and intriguing solutions being put forth seeking to address learning challenges through innovations. We look forward to seeing the fruit of such collaborative projects and efforts seeded at iN.LAB.

15. But it is not the use of technology per se, but how it is used purposefully to enhance the effectiveness of learning and transform learning. I urge those who have not started on this journey to do so, and iN.LAB is committed to supporting you in your efforts.

16. Fourth, looking beyond training. For companies, training alone seldom solves their business challenges. The operating and business context is important. There is an excellent article in last month’s Harvard Business Review with a controversial title “Why Leadership Training Fails – and What to Do about it”. Let me quote from this article: “For the most part, the learning doesn’t lead to better organizational performance, because people soon revert to their old ways of doing things.” We can extend this argument to many areas and types of training.

17. Some companies are interested in buying an integrated solution package to enhance their business performance, rather than training services on its own. And some training providers are therefore transforming to become Business Training Consultancy firms instead. SSG will facilitate and support this. One example is the Asian Culinary Institute, or ACI. Our starting premise is that there is limited value in training many more individuals to enter the Asian culinary sector if workplace practices and conditions deter individuals from joining the sector. For example, if Chinese kitchens continue to insist on the use of large heavy woks, females (or males without the strength to lift these woks) would find it hard to work in that environment. That excludes roughly half the potential labour market. Pumping in more resources to increase training places and the quality of programmes would not address the manpower shortage. So, as part of ACI’s mandate, it works closely with restaurants to support their workplace transformation – with training bundled as part of the overall solution. We see significant scope for more training providers to take on such an expanded role. So, do approach us to discuss your views on this if you wish to talk through how we can come in to support your expansion into non-training related business areas.

18. But none of these four shifts can take place without the right manpower and skills. So, it is important that we continue to develop and professionalise the pool of adult educators, and it is a key focus for SSG.

19. IAL has been stepping up on this front, particularly with the delivery of the Advanced Certificate in Training and Assessment (ACTA) and Diploma in Adult and Continuing
Education (DACE) courses now centralised at IAL. The curriculum is been reviewed from time to time and delivery is constantly strengthened to cater for the needs of learners. But IAL is not limited to running these two courses. It has also been building up a suite of Continuing Professional Development programmes, adding more than 40 new programmes since the beginning of this year such as the Certified Workplace Learning Specialist and workshops on e-learning. In addition, there are now four Masters programmes to cater to a wide range of needs. IAL will continue to introduce new programmes and initiatives particularly in these areas of technology-enabled and workplace based learning, in support of the refreshed TAE Professional Competency Model.

20. Also, under the Adult Educators’ Professionalisation initiative, there are currently more than 150 Associate and Specialist Adult Educators who have been recognised and we will be commencing nominations for Adult Educator Fellows soon. We hope to build a strong and robust pool of adult educators, which will raise the professional image of this community.

21. In 2017, IAL will be moving to the Lifelong Learning Institute, the heart of training and continual learning. IAL will do more, so that it will be a strong and supportive partner for all of you, in support of this transformation of the TAE sector.

22. Let me conclude. The biennial ALS has once again brought our community together, as we learn from the best-in-class experts and practitioners in our own pursuit of lifelong learning and capability development. Whether we are able to build a vibrant and dynamic TAE sector and culture of lifelong learning in Singapore rests upon the calibre of our TAE professionals. I strongly urge our TAE professionals and organisations to work and partner us to overcome the challenges. Seize the opportunities and draw on the resources and support available. Let’s co-create our future TAE landscape together for the future of work, and the future of learning.

23. Thank you.
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Dr Renee Tan is Deputy Director with the Learning and Professional Development Division, Institute for Adult Learning

Piyush Gupta is Chief Executive Officer and Director of DBS Group.

Dr Stephen Billett is Professor of Adult and Vocational Education in the School of Education and Professional Studies at Griffith University, Brisbane, Australia.

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The Institute for Adult Learning (IAL) is at the forefront of building capabilities and continuing professional development for an effective, innovate and responsive Continuing Education and Training (CET) sector. We work closely and support adult educators, businesses, human resource developers and policy makers through our comprehensive suite of programmes and services on raising capabilities and catalysing innovations in CET. IAL also champions research in the key areas of sustaining economic performance through skills, shaping employment and CET decisions, as well as developing innovations through learning technology and pedagogy for informed policies and practices.

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