



# SOCIAL LEARNING AND COLLABORATIVE LEARNING:

Enhancing Learner's Prime Skills

An International Specialised Skills Institute  
Fellowship.

**SIMON BRUCE**

Sponsored by the Higher Education and Skills Group (HESG) of the Department  
of Education and Training

© Copyright May 2019

# Table of Contents

<b>1. Acknowledgements</b>	<b>4</b>	4.5. Social Learning and Collaborative Learning clarified	30
International Specialised Skill Institute (ISS Institute)	7	4.6. Examples of Social Learning and Collaborative Learning enhancing Prime Skills – Case Studies from Future of Education Conference	34
Fellowship Sponsor	8	4.7. Case Studies from EDULearn18 Conference in Majorca, Spain	38
<b>2. Executive Summary</b>	<b>9</b>	4.8. Site Visits to see how Social Learning and Collaborative Learning are enhancing Prime Skills	39
<b>3. Fellowship Background</b>	<b>12</b>	4.9. Micro-credentials – relevant and timely	41
3.1. Fellowship Context	12	4.10. Additional Attribute to Consider: Authentic Assessments	44
3.2. Fellowship Methodology	15	4.11. Common Features across all Examples	45
3.3. Fellowship Period	18	4.12. Developing a new model: Consequential Learning	45
3.4. Fellow's Biography	18	4.13. Challenges and Issues that will impact implementation	49
3.5. Abbreviations / Acronyms / Definitions	19	<b>5. Personal, Professional and Sectoral Impact</b>	<b>51</b>
<b>4. Fellowship Learnings</b>	<b>21</b>	5.1. Personal and Professional Benefit	51
4.1. Introduction and overview	21	5.2. Dissemination Activities	51
4.2. The importance of skills needed for 21st century jobs	21	5.3. Impact on VET Sector, Industry and Society	52
4.3. Prime Skills: refocusing the skills lens to navigate the new employment landscape	25	<b>6. Recommendations and Considerations</b>	<b>54</b>
4.4. The Rise of the Flipped Classroom	28		

<b>7.</b>	<b>References</b>	<b>59</b>
	Skills	59
	Social Learning and Collaborative Learning	60
	Case Studies from Future of Education Conference	61
	The importance of humanities	61
	Site Visits to see how Social Learning and Collaborative Learning are enhancing Prime Skills	62
	Micro-credentials	62
	Additional References	62
<b>8.</b>	<b>Appendices</b>	<b>64</b>
8.1.	List of social and collaborative learning tools	64

# 1. Acknowledgements

Being awarded and subsequently undertaking this Fellowship has been a unique and exceptionally rewarding experience. The Fellow is deeply indebted to the ISS Institute for their support and assistance throughout. The ISS Institute staff were both proactive in providing information and timely in their responses to requests for practical ideas and guidance. The ISS Institute is a unique organisation and the Fellowship has provided a thoroughly enriching opportunity for professional and personal growth.

The Fellow is also grateful for the genuine interest expressed by the Fellowship's sponsor, the Department of Education and Training. The DET expressed their understanding towards the initial proposal and demonstrated their faith in the Fellow to make a significant contribution to the VET sector and the wider training and L&D profession.

Additionally, the Fellow was fortunate to draw on the skills, expertise, knowledge and goodwill of a vast number of colleagues, associates, and connections. Some of these relationships were well established, some very new. All made the Fellowship experience far richer and highly valuable. To all, I am very appreciative.

The following Table of Appreciation lists their contribution.

The following person...	...working as ...	...contributed to this Fellowship by...
Tim Austin	Founder of VLearning and a visual design guru	Providing support, encouragement, expert advice, counsel, friendship and good humour to keep me motivated and to ensure I didn't get too overwhelmed
Franklin O'Carroll	Associate Director, Enterprise Solutions, Holmesglen Institute	Encouraging my initial application and supporting my ongoing involvement
David Saunders	Executive Director, International Education and Business Development, Holmesglen Institute	Supporting my initial application and providing ongoing support
Daniel Gibson-Williamson	Program Coordinator, Professional Workforce Solutions, Holmesglen Institute	Holding the fort for me whilst I was overseas, stepping up to many challenges and generally making it easier for me to juggle the Fellowship activities with work activities
Dr Henry Pook	Director, Holmesglen Centre for Applied Research and Innovation	Assisting with the initial application and encouraging my involvement in the Fellowship

The following person...	...working as ...	...contributed to this Fellowship by...
Gary Workman	Executive Director, Apprenticeship Employment Network	Providing support and additional credibility to my initial application and understanding the potential for the proposal
Wendy Draayers	CEO, International Specialised Skills Institute	Supporting my application, willingly sharing expertise and making valuable connections and for encouraging me to set stretching objectives
Ashley Spowart	CEO, Vanguard Learning	Providing a diversity of international connections and role-modeling the effective use of social and collaborative platforms to enable me to establish many contacts and create productive relationships
Helen Blunden	CEO, Activate Learning Solutions	Sharing some interesting perspectives and many insights
Michelle Ockers	L&D strategist, mentor, facilitator and speaker	Openly and honestly sharing her knowledge

The following person...	...working as ...	...contributed to this Fellowship by...
Jane Hart	Founder of the Centre for Learning & Performance Technologies (C4LPT)	Willingly engaging in a deep conversation to share knowledge and a vast experience, providing guidance and suggestions and for the afternoon tea with her husband in her villa in Port de Pollença, Majorca
Nigel Paine	An experienced leader and consultant working with public service broadcasters, global industry players, government and education institutions	Engaging in a frank and straightforward conversation that gave considerable insights, clarified some initial findings and encouraged my overall objective
Laura Overton	Founder & CEO, Towards Maturity	Providing a welcoming environment for a mutual exchange of learnings and to provide me with a vast amount of rich information
Patrick Phillips	Founder & CEO, Live to Learn Group	Helping set the scene and providing encouragement and good humour

The following person...	...working as ...	...contributed to this Fellowship by...
Mindaugas Grigaitis	Lecturer, Vilnius University Kaunas Faculty and member of the Knowledge Economy Forum	Enthusiastically and infectiously sharing his passion for humanities whilst willingly and actively seeking to acquire new knowledge and having an appreciation of different perspectives
Dale Lyon	Managing Director, Concrete Scotland	Providing rich information and showcasing past successes in a matter-of-fact and engaging style
Brian Robson	Director, Business Development & Training Programs, Ted Rogers School of Management's Diversity Institute, Ryerson University, Toronto Canada	Openly sharing his successes and willingly offering other insights via numerous conversations
John Davis	Regional Managing Director, Asia, Duke Corporate Education	Showing a genuine interest in the Fellowship topic and engaging in mutually valuable discussions
Jez Anderson	Head of Consulting, City & Guild Kineo	Sharing openly and willingly and providing additional directions for research

The following person...	...working as ...	...contributed to this Fellowship by...
Ryan Anderson	Senior Director of Instructional Design and Academic Technologies, University of Wisconsin Extended Campus	Sharing his knowledge openly and being accommodating with the time differences
John Stone	Senior Associate Dean, University of Wisconsin Extended Campus	Proactively offering suggestions, making new connections and openly engaging in ongoing conversations rich with information and insights
Anouk de Blicck	Human Resources Lead, Asia Pacific, Visa University	Ensuring I was able to maximise my time whilst at Visa
Karina Kuhlman	Senior Director, Visa University Singapore, Visa Corporation	Openly sharing extensive regional experience and organisational successes
Urte Sonnenberg	Head of Commercial CPD, Tunnelling and Underground Construction Academy (TUCA) UK	Engaging in a frank and matter-of-fact conversation that provided unexpected insights, additional contacts and reinforcement of the overall objective
Elizabeth Ferdon	Senior Vice President, Business Development, FOX Network and past incoming ISSI Fellow	Willingly sharing expertise and recounting her experience as an incoming Fellow

The following person...	...working as ...	...contributed to this Fellowship by...
Tristan Claridge	Founder, Social Capital Research & Training	Providing a vastly different perspective, allowing me to consolidate my knowledge on key elements whilst expanding my thinking into previously unknown areas
Stephen MacNee	Founder & CEO, Serraview	A matter-of-fact conversation providing reinforcement and clarity for my approach
Mark Harradine	Founder & CEO, Amarna Group	Challenging my thinking and ensuring I was clear as to where I needed to take the project
Andrew Douch	Founder Evolveducation	Sharing some practical examples
Christy Karamzalis	Industry Head, Financial Services, Google Australia and Board Member, Holmesglen Institute	Making some great connections and reinforcing the relevance of the topic
Maclin Macalindong	Multimedia Artist	Interpreting my thoughts and ideas and developing them into visually appealing and informative models and concepts. Embracing and role-modeling collaborative learning and providing timely and excellent customer service

The following person...	...working as ...	...contributed to this Fellowship by...
Josephine Bruce	Prime energiser and sounding board	Providing encouragement and support, allowing me to focus on the huge task, keeping me grounded and ensuring I didn't get ahead of myself

Table 7: Table of Appreciation

## International Specialised Skill Institute (ISS Institute)

The ISS Institute exists to foster an aspirational, skilled and smart Australia by cultivating the mastery of skills, abilities and knowledge of talented Australians through international research Fellowships.

The ISS Institute is proud of its heritage. The organisation was founded over 25 years ago by Sir James Gobbo AC CVO QC, former Governor of Victoria, to encourage investment in the development of Australia's specialised skills. Its international Fellowship program supports many Australians and international leaders across a broad cross-section of industries to undertake applied research that will benefit economic development through vocational training, industry innovation and advancement. To date, over 400 Australian and international Fellows have undertaken Fellowships facilitated through ISS Institute. The program encourages mutual and shared learning, leadership and communities of practice.

At the heart of the ISS Institute are our individual Fellows. Under the International Applied Research Fellowship Program, the Fellows travel overseas and upon their return, they are required to pass on what they have learnt by:

- » Preparing a detailed report for distribution to government departments, industry and educational institutions
- » Recommending improvements to accredited educational courses
- » Delivering training activities including workshops, conferences and forums.

The organisation plays a pivotal role in creating value and opportunity, encouraging new thinking and early adoption of ideas and practice. By working with others, ISS Institute invests in individuals who wish to create an aspirational, skilled and smart Australia through innovation, mastery and knowledge cultivation.

For further information on ISS Institute Fellows, refer to [www.issinstitute.org.au](http://www.issinstitute.org.au)

## **Governance and Management**

**Patron in Chief:** Lady Primrose Potter AC

**Patrons:** Mr Tony Schiavello AO and Mr James MacKenzie

**Founder/Board Member:** Sir James Gobbo AC, CVO

**Board Chair:** Professor Amalia Di Iorio

**Board Deputy Chair:** Katrina Efthim

**Board Treasurer:** Jack O'Connell AO

**Board Secretary:** Alisia Romanin

**Board Members:** John Baker, Camilla Roberts and Mark Kerr

**CEO:** Wendy Draayers

## **Fellowship Sponsor**

The Fellow acknowledges the Victorian government, through the Higher Education and Skills Group (HESG) of the Department of Education and Training, who is a valued sponsor of the ISS Institute and provided funding for this Fellowship. HESG is responsible for the administration and coordination of programs for the provision of training and further education, adult education and employment services in Victoria. HESG has provided the opportunity to expand the Fellow's knowledge, skills and abilities. The Fellow is most appreciative of HESG for believing in the worth of the project and funding of this Fellowship.

## 2. Executive Summary

---

There is an increasing expectation on the Vocational Education and Training (VET) sector to produce graduates with the necessary skills, knowledge and attributes so they are “work ready”. Potential employers are seeking employees not only with the required technical skills but also with the desired non-technical (or soft) skills. Equally, learners are seeking to develop a skills portfolio that will make them attractive as an employee and provide them with career options.

At the same time, the learning landscape is shifting fundamentally and learners are seeking to undertake formal learning that will fit around their lifestyle, and utilises the same tools and technologies used in everyday life. Accordingly, the increasing prominence and popularity of social and collaborative learning as core methods are a response to learners’ expectations and how they want to engage in learning experiences.

Broadly, the aims and objectives of this Fellowship focus on establishing a best practice model that will place high quality learning and continuous improvement at the heart of VET programs. This can be achieved by utilising a combination of technology, tools and practices, ensuring that they are incorporated into learning experiences in a manner that accommodates the styles and expectations of the various learning cohorts. In addition, the implementation of these learning tools should provide an intellectually stimulating and engaging environment for both the learners and educators.

The Fellow proposes that the correct combination of social and collaborative tools and technologies, aligned to the appropriate learning approach can be established as a framework to introduce the concept of Consequential Learning. The Consequential Learning approach fully enhances opportunities to contextualise

the learning content, and provides opportunities for reinforcement of the learning outcomes, leading to the mastery of skills and broadening of knowledge.

The Fellowship methodology included a range of activities to investigate three key domains where skills enhancement can be achieved in learning settings. The three domains are:

1. **Educationalists** (including research, applied research and academic findings)
2. **Learning practitioners** (including those working in the wider tertiary sector and within corporate learning and development as either imbedded practitioners, external consultants, or professional services firms providing advisory services on L&D outcomes and successes)
3. **Technologists** (including private individuals and organisations providing tools and technological platforms)

Various methods were employed during the Fellowship period, which was conducted across 2018. These methods included attending targeted international conferences, engaging in face-to-face and online interviews with influential educationalists and practitioners, and site visits to view relevant examples. Additionally, the Fellow was able to draw on his extensive career in the training, learning and development field, which has included time in the corporate sector, public sector (both nationally and internationally), tertiary sector, and the VET sector (currently). This experience allowed the Fellow to leverage his substantial network and to open new connections across various disciplines and locations.

Some key learning's became evident throughout the Fellowship including the recognition that increasing technological advancements bring new challenges to society and workplaces. These challenges present a new set of issues relating to the skills required of new graduates. Essentially, this has led to a skills dilemma, highlighting the increased attention devoted to the high profile skills related to newer technologies, to the detriment of crucial fundamental skills.

This is coupled with organisations placing less importance on their new employees needing to have full qualifications. Therefore, as these shifting requirements become widely known amongst students and potential students, they may question the relevance of their studies if their courses don't include a focus on the attainment of key work-ready skills.

Accordingly, this Fellowship report focuses on five Prime Skills (a nuanced subset of soft skills) that encapsulates the key skills that have been identified in a wide array of research studies. These Prime Skills are collaboration, communication, critical thinking, creativity and centredness. It is considered that these Prime Skills succinctly cover most soft skills and are the foundation for further development of other soft skills.

Highlighting the crucial role Prime Skills have in student's career prospects will assist in ensuring that learning programs are designed to enhance these Prime Skills. By extension, this will require educationalists to be proficient in these Prime Skills and to use them when designing, developing and delivering learning activities.

Essentially, this Fellowship report will argue that the explicit utilisation of Prime Skills can significantly enhance how new knowledge is transferred and applied beyond the classroom, and that this approach can be particularly successful when coupled with social and collaborative learning practices within a flipped classroom environment.

The Fellowship has had a considerable personal and professional impact on the Fellow. He has benefitted enormously from the rich conversations, considerable volume of research and the extensive number of case studies that have been reviewed. The Fellow has also been able to fine-tune a significant piece of work aligned to a key passion he has held for many years: raising the profile of those important skills that are too often over-looked, over-simplified and downplayed.

The Fellow is excited about the potential impact of this Fellowship for the VET sector (for both educationalists and students), for the corporate learning and development profession (for practitioners, employees and the organisations themselves) and for the wider society. This potential impact can essentially come in the form of more engaging learning experiences, an increase in Prime Skills for everyone associated with these experiences, and a better use of resources and funding.

In summary, the key recommendations and considerations include:

1. Actively promote the new model of Prime Skills as outlined in this report. By doing so it is important to ensure these Prime Skills (a) focus on how the learning takes place as well as what learning takes place, and (b) are explicit and implicit in the learning curricula and the learning framework
2. Shift the focus of accreditation/qualification toward micro-credentials and by doing so create a process that can be easily implemented to enable micro credentialing for educationalists and practitioners in these Prime Skills.
3. Encourage the use of an enhanced version of Consequential Learning that incorporates the elements of the flipped classroom approach, Prime Skills, micro-credentials for educationalists and practitioners, collaborative learning activities and practices for learners, authentic assessments for learners (with an emphasis on Prime Skills), micro-credentials for learners (with an emphasis on Prime Skills), and makes appropriate use of social learning and collaborative learning tools and technologies

Learning's and outcomes from this Fellowship have the potential to be directly applied and implemented through various client initiatives with Holmesglen Institute, the Fellow's current employer. Additionally, the Fellow will actively explore how best to utilise these outcomes across the wider Holmesglen Institute and through all faculties.

Externally, the Fellow will seek out opportunities to present the findings via the TAFE network and the wider learning and development community. This will include, where applicable, presentation of papers at conferences and seminars. Specifically, the Fellow will develop a presentation to position and expand the concept of Prime Skills. The Fellow will also develop a robust case study focusing on the impact of Consequential Learning.

The Fellow will actively explore opportunities to present at Australian conferences (both in the VET sector and the organisational L&D sector) and at international conferences.

# 3. Fellowship Background

---

## 3.1. Fellowship Context

There is an increased prevalence of major educational initiatives with the potential for far-reaching economic and social impact.

Generally, all educational initiatives aim for the achievement of quality outcomes by ensuring high levels of student engagement and participation. However, the learning landscape is fundamentally shifting and learners have justifiable expectations that formal learning opportunities will fit around their lifestyle, mimic the use of the same tools and technologies used in everyday life, and most importantly, will provide high impact outcomes that can be applied readily and rapidly in the workplace. In short, the increasing prominence and popularity of social learning and collaborative learning, as core methods of learning, is seeing learners' expectations shift as to how they engage in learning activities.

These high impact outcomes demand that learning activities focus not simply on content but, also on emphasising how the content can be contextualised. This in turn increases expectations amongst learners to optimise social learning and collaborative learning activities, either formally and/or informally.

Integral to this is the importance of ensuring that learners are engaged in the learning and educationalists are themselves engaging. For this dual engagement to occur successfully four key elements need to exist:

1. Learners need to be able to become engaged i.e. they need to have opportunities to acquire skills that will enhance their learning and ensure they are work-ready
2. Educators need to be engaged (with their role in the education journey as well as with the actual content they are teaching)
3. The learning content needs to be engaging in format, style and delivery
4. Educators need to be engaging in their style i.e. they need to have pre-existing skills that will ensure learners both engage with the learning and attain the required skills

To enable all these elements to co-exist it will be important to have the optimum combination of a suitable learning environment, appropriate learning materials, state-of-the-art technology and infrastructure (as is appropriate), well-presented materials, clear learning objectives and mechanisms to ensure learning activities progress towards achieving these objectives.

**However, the Fellow considers that two vital ingredients in this scenario is the skill set possessed by the educators and the skills being enhanced in the learners.**

**Therefore, when researching this field, the Fellow constructed the following key proposition: “Can social learning and collaborative learning enhance and enable learner’s Prime Skills?”**

(Note: the concept of Prime Skills is explained in a subsequent section. For the purpose of this section, Prime Skills are referred to as a more nuanced set of soft skills).

This Fellowship will therefore highlight the importance of having VET practitioners (in subsequent sections referred to as educators or educationalists) skilled and empowered in employing relevant social and collaborative technologies, tools and practices into program design. Furthermore, this Fellowship will promote the importance of VET practitioners being sufficiently skilled to facilitate learning activities that focus on the contextualisation of content. Finally, this Fellowship will emphasise the crucial role that certain skills, referred to as Prime Skills, have in program design and delivery.

Outcomes from this Fellowship will inform and instruct the educators in how to provide highly engaging and interactive learning experiences that meet the needs of learners and the needs of employers. Learners must be well rounded in a range of skills and knowledge so that they can readily apply these learning's in real life situations. In short, they will be work ready, ensuring employers and industry associations have a larger pool of skilled and capable candidates to choose from. Workers forced to transition from one role or industry to another due to changing circumstances will be able to re-skill rapidly and incorporate new skills and knowledge into their skills portfolio.

Finally, VET practitioners will gain considerable job satisfaction and career stimulus through their contribution to the creation of engaging educational experiences and by the development of skilled and empowered learners.

Broadly, the aims and objectives of this Fellowship will focus on establishing a best practice model that will place high quality learning and continuous improvement at the heart of VET programs. This can be achieved by utilising the appropriate combination of technology, tools and practices that are available, ensuring they are incorporated into learning experiences in a manner that accommodates the styles and expectations of various learning cohorts and also provides an intellectually stimulating and engaging environment for both the learners and the educators.

These newer technologies include such tools as Zoom, Slack, Google Hangouts, Google+ and even the use of drones, etc. It can extend to Learning Records Stores (LRS) which are used to supplement an organisation's LMS to capture data and evidence relating to informal learning. This will aid in understanding how learning was undertaken and which learning was most effective.

However, this research will be careful not to place too much emphasis or expectation on technology alone. Rather, the importance of practices and personal interactions will be examined in both social learning and collaborative learning settings.

The Fellowship will also seek to explore the impact of maintaining high standards of visual design throughout all stages of a learning interaction and in all modes of delivery. This is particularly relevant for a range of learning cohorts: the newer millennials that have been brought up in a highly visual environment; to those with learning challenges or low numeracy and literacy skills; and mature learners who need to re-skill due to the transition being encountered by their current industry.

Whilst many technologies and tools provide easier ways to deliver content, they often do not contextualise the learning content. Therefore, a particular focus of this Fellowship will be to establish best practice methods of delivery that will enable a high degree of skills mastery and reinforcement through activities that do this.

A method called **Consequential Learning** is proposed. Consequential Learning incorporates mixed media in a blended delivery that contextualises the content via narrative-rich branching scenarios. It can be a key attribute of a 70:20:10 delivery approach, and works well with the flipped classroom model. These branching scenarios enable a deeper understanding of the learning content and draw directly on the shared experiences, unique situations and different perspectives of all participants in order to master the learning and provide reinforcement of outcomes.

Whilst seeking to achieve the aims, the following objectives have also been set:

1. Explore examples in the private/corporate sector and seek to apply them to the VET sector
2. Identify relevant studies and research undertaken by educationalists and by learning and development (L&D) practitioners and seek to apply these successes to the VET sector
3. Ensure that the final considerations and any frameworks designed are able to be applied to the VET sector, the wider tertiary sector and private/corporate sector
4. Investigate across three key domains how skills enhancement in learning settings is best achieved. The three domains are:
  - a. Educationalists (including research, applied research and academic findings)
  - b. Learning practitioners (including those working in the wider tertiary sector and within corporate learning & development as either imbedded practitioners, external consultants, or professional services firms providing advisory services on L&D outcomes and successes)
  - c. Technologists (including private individuals and organisations providing tools and technological platforms)
5. To draw on experience and expertise from major global regions:
  - » Australasia
  - » Europe
  - » North America
6. To undertake this investigation at a meta-level and in a manner that enables the Fellow to embrace as many aspects of the Fellowship objectives as possible:
  - » Utilise social and collaborative tools, platforms and practices
  - » Learn as much as possible in different ways
  - » Remain mindful of which skills are being utilised during the Fellowship activities and be aware of how they are being enhanced
  - » Give as much as is received in terms of insights and learnings

Essentially, the outcomes from this Fellowship are important in the Australian context as there is an increased recognition and acknowledgement that soft skills are required for the workforce of the future. Additionally, there are dual increased expectations:

1. Employers seeking graduates with greater skills portfolios
2. Graduates understanding that employers are seeking these skills

At a fundamental level, this Fellowship also recognises the:

- » Increasing importance of 21st Century skills and skills for the future
- » Need for the VET sector to remain relevant
- » Suggestion that VET educators need to undertake skills enhancement

The VET sector is arguably entering a renaissance period where it is enjoying renewed importance and relevance, particularly in Victoria with the infrastructure and construction boom. This has seen a significant demand for building, construction, and tunnelling expertise in particular. At the time of writing this Fellowship report, free TAFE courses have recently come into effect in Victoria and this is creating a renewal of interest from students and employer groups. This is also causing an increase in expectations of the graduate-pipeline. However, the

increased significance of key soft skills should not be overlooked in this rush to produce a sustainable supply of quality graduates.

Therefore, it is anticipated that this research into the importance of Prime Skills and the development of a Consequential Learning approach, will lead to significant opportunities to provide highly engaging and outcomes-focused learning experiences.

These include:

- » Higher apprenticeship schemes
- » Partnerships between TAFE and major corporations
- » Opportunities to incorporate and instigate applied research
- » Development of strategic partnerships (TAFE / TAFE and TAFE / Industry)
- » Creation of innovation hubs in TAFEs
- » Promotion and encouragement of cross-generational learning opportunities
- » Focusing on the entire spectrum of learning cohorts:
  - » Younger school leavers
  - » Older and more mature employees
  - » Everyone in between

## 3.2. Fellowship Methodology

The challenge for this Fellowship topic was to connect with the right experience in the right way. Social learning is not something you can actually see and collaborative learning examples are often difficult to identify (unless they are in a formal collaborative learning situation). Therefore, the Fellow understood that it would be a challenge to experience examples of these types of learning (especially when they were enhancing the skills of the learners) first hand.

During the initial research, the Fellow identified that it would be more appropriate to connect with practitioners, educationalists and others who had achieved (or observed) success in the use of social learning and collaborative learning. This led to the conclusion that the Fellow would seek people at conferences and networking events that had association with the conferences. The objective would be to then make deeper, sustainable connections after the conferences with presenters who had the appropriate experience, expertise and exposure to the topic under consideration.

It was also important that the Fellow not become closely aligned with one particular tool or tool provider as this may narrow the Fellowship outcomes and/or run the risk of the research becoming skewed and/or led by particular attributes of a specific technology offering.

A variety of methods were used during the Fellowship period. These included:

- » Attending targeted conferences:
  - » Future of Education, Florence, Italy (250 attendees, 45 countries, 160 presentations)
  - » EduLEARN18, Palma, Spain (800 attendees, 75 countries, 490 presentations)
  - » EduTECH18, Singapore (4000+ attendees, 800+ organisations, 300+ speakers)
- » Fully immersing in a range of conference activities:
  - » Keynote sessions
  - » Plenary sessions
  - » Panel discussions
  - » Specialised topics
  - » Workshops
  - » Expositions

- » Actively participating in conference networking activities
- » Face-to-face meetings with:
  - » L&D Practitioners
  - » This included Nigel Paine (who works as an independent consultant), Jez Anderson (Head of Consulting, with City & Guilds Kineo), Laura Overton (Founder & CEO, Towards Maturity) and Jane Hart (Founder of the Centre for Learning & Performance Technologies (C4LPT)). The Fellow met with Jane whilst on Majorca and the others whilst in London.
  - » Educationalists – a significant number who were either presenters and/or delegates across the three conferences
- » Online meetings via a range of video-based tools (e.g. Zoom, Google Hangouts, Skype, Skype for Business, FaceTime, WebEx)
- » Telephone conversations
- » Visiting corporate institutions
- » Accepting invitations for site visits and tours of corporate purpose-built learning centres
  - » A corporate university (VISA Corporation)
  - » A specialised skills learning academy (TUCA – Tunnelling & Underground Construction Academy)
- » Engaging in impromptu conversations with a wide range of individuals and groups in various settings
- » Distributing a formal questionnaire to a wide variety of individuals from across the three domains and from all regions globally

This Fellowship methodology is represented in the following image:



Figure 1: Who, When, How

Fellowship activities consisted of a range of interactions with a variety of people throughout all phases of the Fellowship and across the globe. The three types of interactions are displayed in the following table along with the location where each type of interaction occurred.

Type of interaction...	...included a combination of...	...across these locations	
<b>Face-to-face Interactions</b>	<ul style="list-style-type: none"> <li>• Attendance at conferences</li> <li>• Participation in meetings</li> <li>• Site visits and tours</li> <li>• Networking activities (both formal &amp; informal)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Australia</b> <ul style="list-style-type: none"> <li>○ Melbourne</li> </ul> </li> <li>• <b>Asia</b> <ul style="list-style-type: none"> <li>○ Singapore</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>UK and Europe</b> <ul style="list-style-type: none"> <li>○ London</li> <li>○ Florence, Italy</li> <li>○ Majorca, Spain</li> </ul> </li> </ul>
<b>Synchronous Interactions:</b> real-time conversations with two-way (or more) communication with immediate feedback and responses	<ul style="list-style-type: none"> <li>• FaceTime</li> <li>• Google Hangouts</li> <li>• Skype</li> <li>• Skype For Business</li> <li>• Zoom</li> <li>• WebEx</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Australia</b> <ul style="list-style-type: none"> <li>○ Melbourne</li> <li>○ Sydney</li> <li>○ Brisbane</li> </ul> </li> <li>• <b>Asia</b> <ul style="list-style-type: none"> <li>○ Singapore</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>USA</b> <ul style="list-style-type: none"> <li>○ Los Angeles</li> <li>○ Madison</li> <li>○ New York</li> </ul> </li> </ul>

Type of interaction...	...included a combination of...	...across these locations	
<b>Asynchronous Interactions:</b> threaded conversations over a delayed time period consisting of more reflective responses	<ul style="list-style-type: none"> <li>• Gmail</li> <li>• Outlook</li> <li>• iMessage</li> <li>• Slack</li> <li>• SMS</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Australia</b> <ul style="list-style-type: none"> <li>○ Melbourne</li> <li>○ Sydney</li> <li>○ Wagga Wagga</li> <li>○ Brisbane</li> <li>○ Adelaide</li> </ul> </li> <li>• <b>UK and Europe</b> <ul style="list-style-type: none"> <li>○ London</li> <li>○ Dublin</li> <li>○ Glasgow</li> <li>○ Florence</li> <li>○ Milan</li> <li>○ Berlin</li> <li>○ Vilnius</li> <li>○ Marseille</li> <li>○ Barcelona</li> <li>○ Lisbon</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>North America</b> <ul style="list-style-type: none"> <li>○ Toronto</li> <li>○ New York</li> <li>○ Los Angeles</li> <li>○ San Francisco</li> <li>○ Phoenix</li> <li>○ Irvine</li> </ul> </li> <li>• <b>Asia</b> <ul style="list-style-type: none"> <li>○ Hong Kong</li> <li>○ Singapore</li> <li>○ Kuala Lumpur</li> <li>○ Manilla</li> </ul> </li> <li>• <b>New Zealand</b> <ul style="list-style-type: none"> <li>○ Auckland</li> </ul> </li> </ul>

Table 1: Types of Fellowship Interactions

The information in the above table is also depicted visually in the following map.

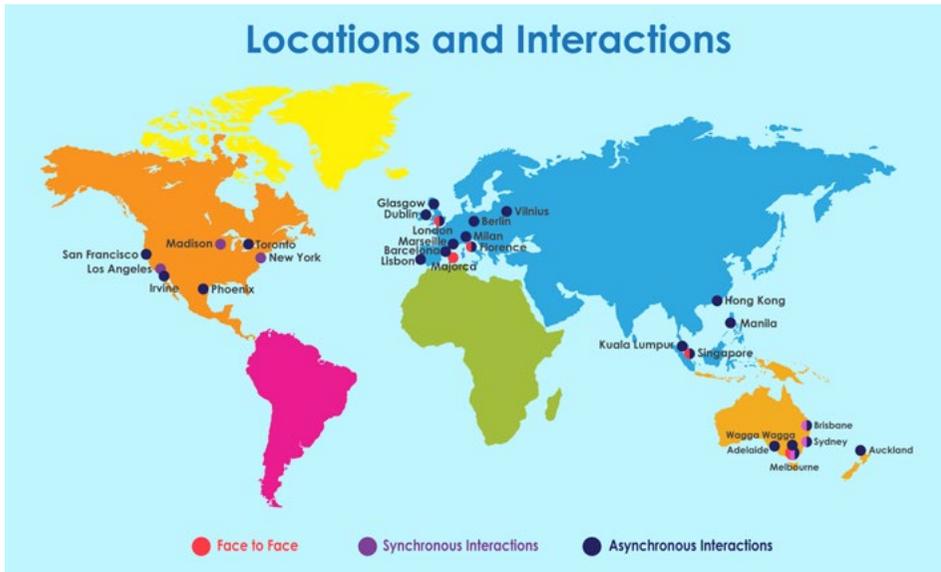


Figure 2: Locations and Interactions

### 3.3. Fellowship Period

The Fellowship was awarded in 2017 and the Fellow immediately undertook a period of research and initial engagement. This was to ensure that the scope of the Fellowship was clearly defined, and the best possible itinerary could be created to maximise time and effort.

The Fellowship period can be broadly divided into seven key stages. These are depicted in the following image along with descriptors for the key activities within each stage.

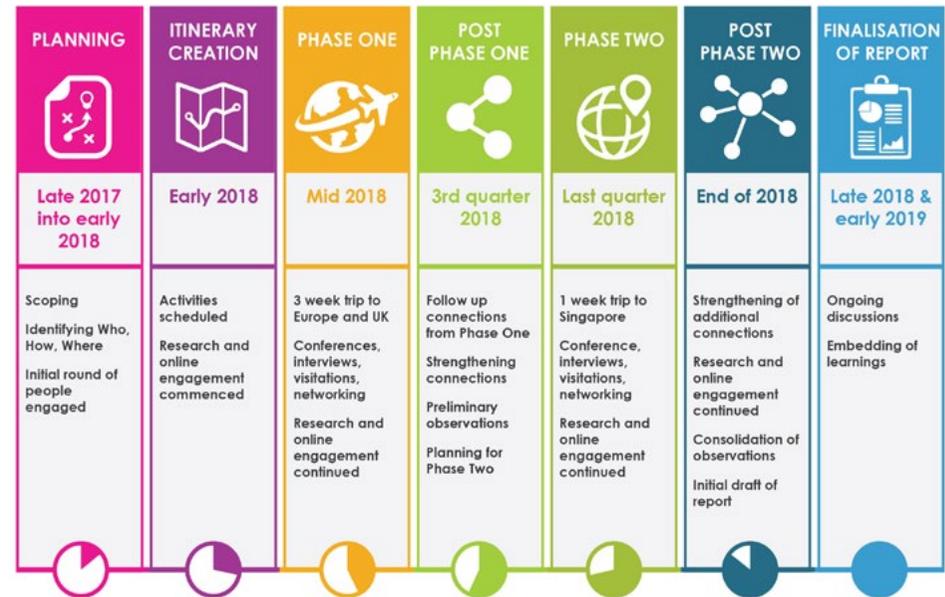


Figure 3: The Seven Stages of the Fellowship

### 3.4. Fellow's Biography

The Fellow has enjoyed an extensive career in the training/learning & development field, which has included time in the corporate sector, in the public sector (both nationally and internationally), in the tertiary sector and now in the VET sector. Each sector has its unique challenges when it comes to providing quality learning. The Fellow has been able to draw on learnings and successes achieved across all sectors and has applied them in unique ways in other settings.

## Summary

- » An internationally experienced learning innovation professional with extensive expertise in working with executives and their teams to define, develop and execute enterprise-wide learning & development strategies. A key focus of these strategies includes organisational transformation programs, employee engagement initiatives and professional acumen activities.
- » A reputation for quickly and efficiently developing highly creative, engaging and innovative solutions that redefine how learning is delivered across organisations by utilising best practice and leading edge approaches, techniques and strategies.
- » Founder and principal of boutique leadership development consultancy: [brucebalance.com.au](http://brucebalance.com.au)
- » Head of Professional Workforce Solutions Holmesglen Institute: [holmesglen.edu.au/employers/professional\\_workforce\\_solutions](http://holmesglen.edu.au/employers/professional_workforce_solutions)
- » Working with organisations to ensure Social Learning and Collaborative Learning practices are integral to their overall learning strategy.
- » Designing and coordinating innovative Learning Consortiums that enable organisations to demonstrate a far-reaching commitment to learning.
- » Spearheading the introduction of the Consequential Learning approach that achieves tangible business outcomes and sustainable change in learners' skills and knowledge.

## Education and Professional Qualifications

- » Executive Coaching - Institute of Executive Coaching & Leadership
- » Certificate IV in Assessment and Workplace Training - Victoria University
- » Graduate Diploma in Applied Finance and Investment - Securities Institute of Australia (FINSIA)
- » Bachelor of Economics - La Trobe University

## Board / Community / Volunteer Activities

- » Committee Member for Melbourne Business Awards
- » Committee Member for Business and Economic Development Advisory Committee, Kingston City Council
- » Board Member for Victoria University Alumni Advisory Board
- » Mentor for La Trobe University Alumni
- » Mentor for Victoria University Alumni
- » Mentor for long term unemployed

## 3.5. Abbreviations / Acronyms / Definitions

### Key abbreviations, acronyms and definitions

L&D – learning and development	Typically, the activity (or the department devoted to) providing training and associated skills development for employees of organisations
21C - 21st Century Skills	Skills identified as being relevant and necessary to successfully develop a career in the current (and near future) work environment
Soft Skills	Essentially skills and personal attributes that enable the interaction between people
Hard Skills	Teachable skills that can be defined and measured that are required to perform a specific job or task
Work ready skills	A combination of basic academic skills and key soft skills deemed necessary to attain and maintain employment
STEM	Science, technology, engineering, and mathematics

Social Learning	The outcome of when a person leverages their know how along with their know who to increase their know what
Collaborative Learning	The output of a process that commences with an expressed intent to leverage the knowledge and connections of a group in a workplace in order to meet a specific need or to achieve a particular objective
Learning platform	An integrated set of interactive online services that provides the teachers, learners and others involved in education with information, tools and resources to support and enhance educational delivery and management
Learning technology	Technology that is used in teaching and learning
Transferable Skills	Skills that you develop as you progress through employment, education or training
Flipped Classroom	An instructional strategy and a type of blended learning that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom. It moves activities, including those that may have traditionally been considered homework, into the classroom
70:20:10 learning	A learning and development theory that corresponds to a proportional breakdown of how people learn effectively: 10% via formal classroom activities; 20% via exposure to coaches and mentors; 70% via experienced-based and on-the-job interactions
MOOC – Massive Open Online Courses	A model for delivering learning content online to any person who wants to take a course, with no limit on attendance. Can be either via pay-per-use or free to use model

# 4. Fellowship Learnings

---

## 4.1. Introduction and overview

The importance of what are traditionally referred to as soft skills has been a key area of focus for the Fellow for a number of years. Too often these skills are overlooked as being irrelevant, or at least being of reduced significance. They are increasingly becoming over-shadowed as focus shifts towards digital skills and STEM-related skills.

The Fellow has sought to make these soft skills front and centre in the learning content of programs, and of equal importance, integral in the learning approach. The Fellow is aware of the considerable body of research that has been undertaken over recent years aligned to the broad area of work-ready skills, 21st century skills, and career skills. It was considered appropriate not to repeat existing research, but rather to make the findings more accessible and readily applicable to a learning context.

With regard to social learning and collaborative learning experiences, the Fellow identified that considerable research was being undertaken around successful examples. These successes were often shared by research findings at international conferences. The Fellow then sought to become connected with the authors of these case studies. This resulted in a number of significant learnings and these are presented in the following sections under the headings:

1. The importance of skills needed for 21st century jobs
2. Prime Skills: refocusing the skills lens to navigate the new employment landscape

3. The Rise of the Flipped Classroom
4. Social Learning and Collaborative Learning clarified
5. Examples of Social Learning and Collaborative Learning enhancing Prime Skills – Case Studies from Future of Education Conference
6. Case Studies from EduLEARN18 Conference in Majorca, Spain
7. Site Visits to investigate how Social Learning and Collaborative Learning are enhancing Prime Skills
8. Micro-credentials – relevant and timely
9. Additional Attribute to Consider: Authentic Assessments
10. Common Features across all Examples
11. Developing a new model: Consequential Learning
12. Challenges and Issues that will impact implementation

## 4.2. The importance of skills needed for 21st century jobs

The development of new skills, and the enhancement of existing skills, is a fundamental aspect of formal education. This is true for vocational and tertiary

learning as it is for primary and secondary learning activities. It is also true for work-place learning activities whether via formal or informal learning settings. An increasing challenge arises when the technological advances within society and workplaces specifically present a new set of issues relating to what skills are required and when they are required. This has seen a rise in the call for technology-related skills (e.g. specifically related to coding and programming through to data analysis aligned to the rise of big data).

However, this challenge is exaggerated by the fact that there is often a lag in the responsiveness of learning institutions to the rate of change compared to that of technology.

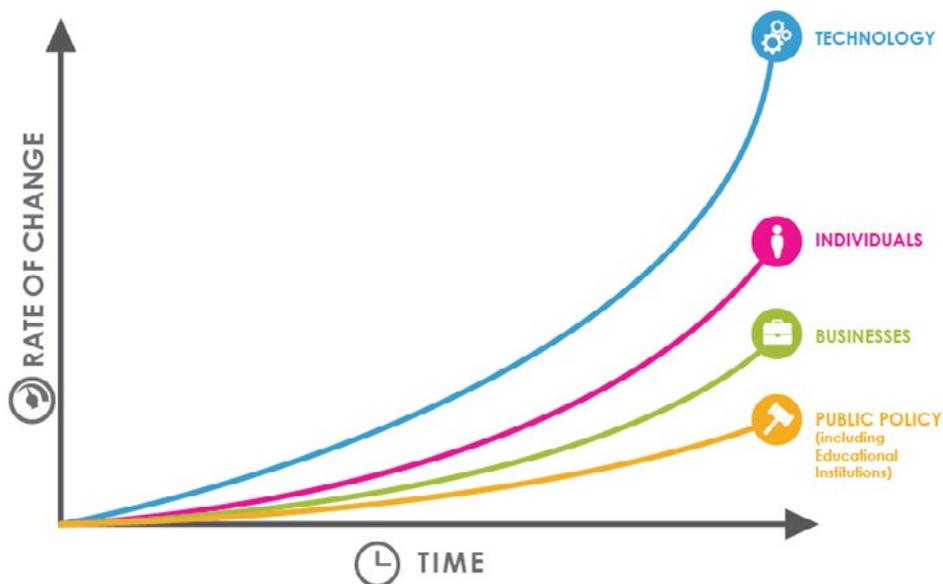


Figure 4: Rate of Change versus Time to Change

As is shown in the above diagram, as the gap widens, the expectation on technology increases (perhaps unrealistically) to help bridge this gap (a gap that technology itself has helped create). Alternatively, individuals are expected (again, perhaps unrealistically) to develop new skills to capitalise on this new technology. Some would say increased focus needs to be devoted towards harnessing these new skills by way of leadership (people and organisations). Additionally, these gaps give rise to the need for inter-personal skills to better work with colleagues and to relate to customers. They also give rise to the need for skills to help shape public policy and to guide the structure and capability of learning institutions.

In short, technology is bringing new ways of working and new skills are required for these new ways of work. However, fundamental skills that have always been deemed necessary are becoming increasingly important.

All this has led to what the Fellow refers to as the **Skills Dilemma**. Broadly this skills dilemma states that:

1. Jobs are either requiring advanced skills or are deskilling (due to the rise of bots, automation, AI, and/or the influx of disruptors). This will lead to roles increasingly being aligned to either data analysis activities or data entry tasks.
2. There is an ever-increasing focus by business on customer interaction and retention. This is primarily due to the potential to capture even richer data and thereby enhance customer share, to gain (or further exploit) competitive advantage, and to increase market penetration. More and more organisations of all types and sizes are devoting resources to the analysis of data relating to customer insights. These organisations include those selling products and/or services in all sectors and industries including educational offerings. Organisations wish to engage at a deeper level (or to be seen to be engaging at this deep level) with their customers so they can form an enduring and ultimately more profitable relationship with them.

3. Ironically, it is often the least paid, least valued, least incentivised, least informed, least skilled employee that holds customer value in their hands. In other words, the frontline between an organisation's product/service isn't the highly skilled data analyst, programmer/coder, engineer or anyone in senior management. Instead, organisations will live and die on how well their customer service staff, their front desk staff, their call centre operators, engage and interact (and ultimately connect) with everyday customers (and potential customers).

**The skills dilemma highlights the fact that increased attention is being devoted to high profile skills related to newer technologies to the detriment of fundamental or core skills that arguably have always been important but are now becoming crucial.**

With the above in mind, the Fellow realised that a logical starting point for the Fellowship research was to find a suitable list of exactly what constitutes these key skills. It quickly became evident that considerable research and extensive studies have been undertaken by many organisations and influential consulting firms into skills that will be required for jobs of the future. This has resulted in numerous terms being used to describe these skills: work-ready skills, 21st Century skills, foundation skills, future skills, career skills, etc. It is noted that the term soft skills remain a key descriptor in many studies.

This Fellowship report doesn't wish to document all of these skills studies, however it is appropriate to mention several prominent and highly relevant studies.

Firstly, the World Economic Forum (WEF) has undertaken considerable work in this area and has made several significant publications in recent years. They produced a list of what were deemed the top skills in 2015, and compared this to their predicted skills for 2020.

Top skills in 2015	Top skills in 2020
1. Complex problem-solving	1. Complex problem-solving
2. Coordinating with others	2. Critical thinking
3. People management	3. Creativity
4. Critical thinking	4. People management
5. Negotiation	5. Coordinating with others
6. Quality control	6. Emotional intelligence
7. Service orientation	7. Judgement and decision-making
8. Judgement and decision making	8. Service orientation
9. Active listening	9. Negotiation
10. Creativity	10. Cognitive flexibility

Table 2: World Economic Forum Top Skills (World Economic Forum – Future of Jobs Report 2018)

A full analysis of these lists and their component elements can be obtained by referring to the relevant report. However, it is worth highlighting the shift in some of the skills through the list (e.g. critical thinking and creativity) and the appearance of new skills on the list (e.g. emotional intelligence and cognitive flexibility). WEF have highlighted some key drivers of this change in skills focus. Initially there are demographic and socio-economic drivers such as the: changing nature of work (including the rise of flexible work and the gig economy); the increasing prevalence of the middle class in emerging markets; and the impact on climate change, natural resource constraints and the transition to greener economies.

WEF also highlighted the impact of technological drivers on this shift in skills including: the mobile internet and cloud technology; advances in computer power and big data; and the new energy supplies and their supporting technologies. This led WEF to define what they term 21st Century Skills (21C) that need to be the focus of a student's education. These 21C skills comprise:

- » **Foundational literacies** (how students apply core skills to everyday tasks) such as literacy, numeracy, scientific literacy, ICT literacy, financial literacy, cultural and civic literacy
- » **Competencies** (how students approach complex challenges) such as critical thinking/problem-solving, communication, creativity, collaboration
- » **Character qualities** (how students approach their changing environment) such as curiosity, initiative, persistence/grit, adaptability, leadership, social and cultural awareness

Deloitte Access Economics conducted a significant study of skills in partnership with DeakinCo. This study, published in 2017, assessed the importance of obtaining and measuring soft skills to better understand areas that need to be improved in the Australian workforce and businesses. The study produced a list of soft skills for business success.

Soft Skills for Business Success
Self-management
Communication
Teamwork
Problem-solving
Digital literacy
Critical thinking
Innovation
Emotional judgement
Global citizenship
Professional ethics
Enterprise skills

Table 3: Deloitte Soft Skills for Business Success (Deloitte, Access Economics – 2017)

This study highlighted the importance of **transferable skills** (those that can be applied in varied contexts), **employability skills** (those required to gain a job and to then advance a career), and **enterprise skills** (those required to create solutions to business issues and recognise the opportunities that exist).

Again, it is interesting to note the many similarities between the Deloitte study and the work undertaken by WEF. These similarities exist both in the composition of the skills and the ranking of those skills in importance.

Additionally, LinkedIn surveyed their users' profiles who transferred between roles and found that there were key soft skills that were prominent amongst the more successful professionals. This enabled LinkedIn to produce what they deemed as the 10 most in-demand soft skills in 2017:

Key Soft Skills prominent for successful professionals
Communication
Organisation
Teamwork
Always punctual
Critical thinking
Social skills
Creativity
Interpersonal communication
Adaptability
Friendly personality

Table 4: LinkedIn Key Soft Skills (LinkedIn – 2018)

Again, similarities in the composition and ranking within these lists are evident.

On a slightly different, but equally important front, Hart Research Associates on behalf of The Association of American Colleges and Universities conducted a study. This report, published in 2015, produced a list of learning outcomes rated by employers.

Learning outcomes rated by employers	
The ability to effectively communicate orally	85%
The ability to work effectively with others in teams	83%
The ability to effectively communicate in writing	82%
Ethical judgement and decision-making	81%
Critical thinking and analytical reasoning skills	81%
The ability to apply knowledge and skills to real-world settings	80%
The ability to analyse and solve complex problems	70%
The ability to locate, organise and evaluate information from multiple sources	68%
The ability to innovate and be creative	65%
Staying current on changing technologies and their applications to the workplace	60%
The ability to work with numbers and understand statistics	56%
The ability to analyse and solve problems with people from different backgrounds and cultures	56%

Table 5: Hart Research Associates, Employer-rated Learning Outcomes (Hart Research Associates - 2015)

This study highlights the importance placed on the key skills that enable people to interact with each other, to express themselves articulately and to make sound decisions.

Other studies produced by Business Council of Australia, CSIRO, McKinsey and DeakinCo all have concluded similar skills are required to tackle the 21st Century skills landscape. It is obvious that the increasing prevalence of technology in our lives will escalate the demands of people tasked with designing, developing and implementing such technology. Additionally, with the rise of big data (both as an analysis activity and as a means for businesses to gain a competitive advantage), there will be an increasing need for “hard” skills appropriate for using this technology. This undoubtedly has contributed to the push for STEM focused educational opportunities. However, this shouldn't be to the detriment of the key soft skills as clearly highlighted in the above studies.

Whilst several of these skills may be similar, and others may be deemed as carrying less weight, they are nevertheless indicative of what employers are seeking when they recruit.

When this is coupled with the recent trend toward leading organisations (including Google, Apple and Facebook) not requiring employees to have college degrees, it is clear that organisations are realising that their better (and most productive) employees possess the key skills that will enable, create and enhance a productive and harmonious workplace culture.

**As these shifting requirements become more widely known amongst students and potential students, they will begin to question the relevance of their studies if they don't include a focus on the attainment of these key soft skills.**

### 4.3. Prime Skills: refocusing the skills lens to navigate the new employment landscape

Whilst the term soft skills remains prevalent in many studies and reports, and is often used in many settings, it is deemed somewhat clumsy and even misrepresentative of what these important skills are. There is also a school of

thought that refers to soft skills as being more in line with permanent skills as they are skills that are always needed (and therefore hard skills are aligned to temporary skills as they more readily become outdated or, at least, need to be updated as new technology, new roles or new workplace activities dictate).

This Fellowship report proposes the use of five **Prime Skills** that encapsulates the key skills as evidence from the numerous studies. These Prime Skills are **collaboration, communication, critical thinking, creativity and centredness**. It is considered that these Prime Skills succinctly cover most soft skills and/or they can be the foundation for the development of other key soft skills. Importantly, when coupled together they have the capability to enhance skills development in many areas covered in all of the above studies. Finally, these Prime Skills can enhance and contribute to the development of technological/digital skills and business skills alike.

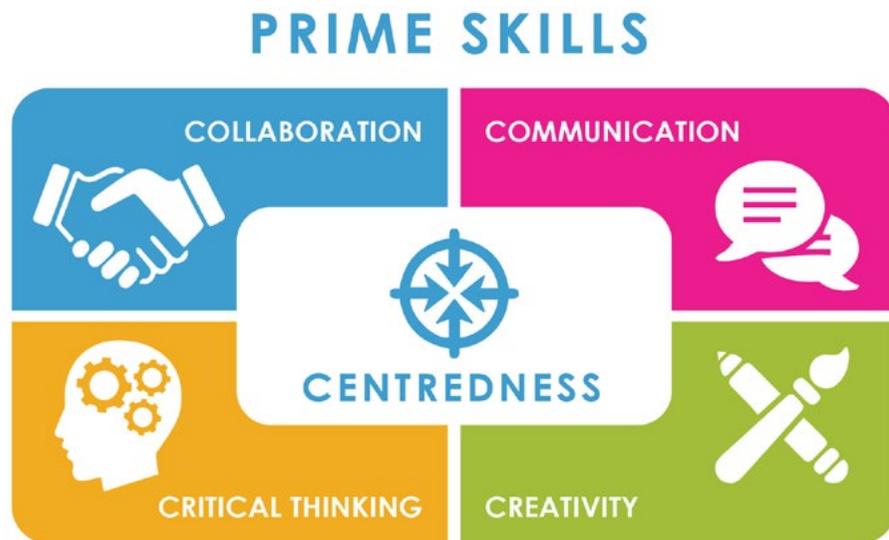


Figure 5: Prime Skills - the 5Cs (© Simon Bruce 2019)

This new model of Prime Skills takes much of the previous studies and reports and distils the fundamental “soft skills” into a package that can be considered prime to all learning and development activities. It is anticipated that a paper dedicated specifically to these Prime Skills will be developed at the conclusion of this Fellowship, however, the key components of Prime Skills are highlighted as follows:

- » **Collaboration:** embraces negotiation, team work, diversity (both awareness of and working with).
- » **Communication:** embraces LLN (language, literacy, numeracy), presentation skills, verbal and non-verbal communication.
- » **Critical Thinking:** embraces decision making, questioning, reasoning, employing different perspectives, open mindedness.
- » **Creativity:** embraces innovation, continuous improvement.
- » **Centredness:** embraces emotional intelligence, resilience.

These are referred to as Prime Skills as they are analogous to prime numbers (in number theory) and prime paint (in the painting profession).

Prime numbers are the natural numbers greater than one that are not products of two smaller numbers. In other words, they are not formed by multiplying other numbers. A prime number, when multiplied with either another prime number or with a composite number, is capable of creating another composite number. Composite numbers are just as their name implies, a composition of other numbers. This is a good analogy for Prime Skills, which essentially exist in their own right, but when combined together with one or more Prime Skills, or with a non-prime-skill (e.g. a skill more aligned to the use of technology, etc.), they would create a composite skill.

The analogy to prime paint draws on the fact that they are one of the most powerful tools used by any professional painter. What goes underneath the actual

paint is crucial for the overall painting job; it depends entirely on how well the item to be painted is primed. For this reason, prime paint is often seen as an excellent problem-solver that's less like paint and more like glue. It sticks to whatever surface is being prepared and turns it into a smooth, uniform surface that's ready for paint. Relate this process to the concept of skills development. Prime Skills can be seen as the skills that prepare a learner for a task needing to be completed. These Prime Skills act as glue for all other skills to adhere to and make it possible for these skills to be scaffolded.

Importantly, these Prime Skills need to not only focus on what is being taught but how students are being taught. In short, educationalists need to be expert and proficient in Prime Skills and ensure their learning programs and activities exploit opportunities to firstly develop, then enhance, and finally embed new knowledge and reinforce these five Prime Skills.

An important component of the Fellowship activities was the time dedicated to meeting with key L&D practitioners (as listed in Fellowship Methodology section). All of these conversations included discussion, in some part, on Prime Skills. The Fellow's conversation with Nigel Paine emphasised Nigel's research findings that certain skills take on increased importance in today's work environments. (These skills align with the Fellow's concept of Prime Skills.) Social learning and collaborative learning activities need to allow learners to adapt to a new environment; they need to help people to help themselves. In fact, Nigel saw resilience and agility as being two of the most crucial skills required. As Nigel said "Workplaces are tough and getting tougher" and "Worker's problems will only be solved for a week and everyone, in particular new graduates, need resilience and agility to manage these problems because no one else will".

This was a point shared by Jez Anderson from Kineo, who explained that many of the more advanced organisations are engaging in learner enablement. This has seen the rise of the curation model, that encourages learning assets to flow via collaborative practices. This in turn heightens the need for Prime Skills, especially communication, collaboration and critical thinking.

The Fellow's conversation with Laura Overton from Beyond Maturity explored the importance of culture within organisations and within learning institutions. Culture plays a significant role in ensuring these Prime Skills are prominent, not only in all employees but especially in the professionals tasked with bringing learning programs to life. This is an example of how the Prime Skills themselves are necessary to embed Prime Skills. The Beyond Maturity research activities links learning to business. A key finding is that technology doesn't make the difference, it's how you apply the technology that matters. By extending this finding, it could be stated that social learning and collaborative learning technologies are nothing without social learning and collaborative learning practices and activities, and these practices and activities work best when they draw extensively on the 5Cs of Prime Skills.

However, the Fellow is acutely aware of the vital role that technologies play in providing learners with opportunities to apply (and acquire) Prime Skills. The Fellow's conversation with Jane Hart focused on how the appropriate mix of social learning and collaborative learning tools and technologies can enhance the key Prime Skills. In fact, Jane reiterated that these tools and platforms are merely enablers and that the primary focus should always be on how people interact.

Additionally, the Fellow intends to expand on this concept of Prime Skills in an additional paper so that they can gain widespread exposure and be utilised as a reference point to guide educational programs. This additional paper would highlight the dark side of Prime Skills and ensure that they are not over-emphasised, are not overused or abused. However, this is a project beyond the scope of this Fellowship and is outside the remit of this Fellowship report. The Fellow is keen to engage with a suitable sponsor to discuss how the concept of Prime Skills can gain increased exposure and sector-wide adoption.

**By highlighting the crucial role Prime Skills have in a student's career prospects, it should assist to ensure that learning programs are aligned to enhancing these Prime Skills.**

**By extension, this will require educationalists to also be proficient in these Prime Skills and to be able to use them when designing, developing and delivering learning activities.**

## 4.4. The Rise of the Flipped Classroom

The flipping of educational activities has received increased focus in recent years. Some of this attention stems from the dissatisfaction with current ways of teaching, and the impact of social media tools in the hands of students. Other reasons for this focus stem from a desire to enhance collaborative opportunities for learners to come together, share their knowledge and understanding of the content, and deepen their mastery of the material through placing it in context.

This flipped classroom approach can involve numerous activities, but essentially allows learners to engage in discussion and dialogue, in conversations and reflection, and in interaction and experimentation to contextualise the learning content.

This increased use of the flipped classroom has resulted in numerous studies being conducted on its effectiveness. As part of this Fellowship, the Fellow attended several conferences and found it interesting to note the prominence of flipped classroom discussion. For example, at the Future of Education Conference in Florence, Italy, there was an entire conference track devoted to the flipped classroom, whilst at EduTECH18 Asia, there was a pre-conference workshop devoted to the flipped classroom.

Disappointingly, much of the discussion at both these conferences failed to fully articulate the fundamental difference between the traditional classroom model and the flipped classroom model. Very few sessions were able to highlight the advantages of the flipped classroom model. Overall, the understanding amongst educationalists and practitioners appeared to be surprisingly low, one delegate interjected during a presentation to state “You are assuming that everyone here knows what the flipped classroom is”.

Additionally, at the aforementioned pre-conference workshop on the flipped classroom, the desired outcomes were not achieved as the conference organisers neglected to distribute the pre-workshop materials that had been prescribed by the facilitator. This resulted in compromised learning outcomes, and a missed opportunity for participants to leverage from the case study that was to be presented during the session. In short, it was an example of just how easily a flipped classroom activity can lead to disengagement and missed learning outcomes.

Essentially, the flipped classroom model delineates a learner's first exposure to materials from other activities that provide deeper understanding. This first exposure is provided to learners in a manner that enables them to consume it in their own time, in their own space, and usually in the convenience and familiar environment of their “room” i.e. their personal study space. Social learning and collaborative learning tools and technologies have enabled and enhanced the consumption of this first exposure in flipped classroom activities.

A keynote speaker, at EduLEARN18, in Majorca, Eric Mazur, neatly articulated this. Mr Mazur's straightforward description of the flipped classroom made a clear delineation between the concept of the “class” (the place where students gather together to engage in a learning activity) and the “room” (the place where students are separated from each other by proximity and location but may be connected digitally). This “room” may be their bedroom/study, a workspace in a learning commons/library, or even in a café. Essentially, somewhere that allows them to focus on the consumption of the learning materials.

In the traditional model, students begin together and then are separated. In the flipped model, students begin as individuals in their “room” and then come together in the “class”.

The Fellow has been using a very similar explanation when working with a long time collaborative partner VLearning. We have developed a useful visual to clearly depict the flipped classroom and this aligns to Mr Mazur's explanation. This is shown below.

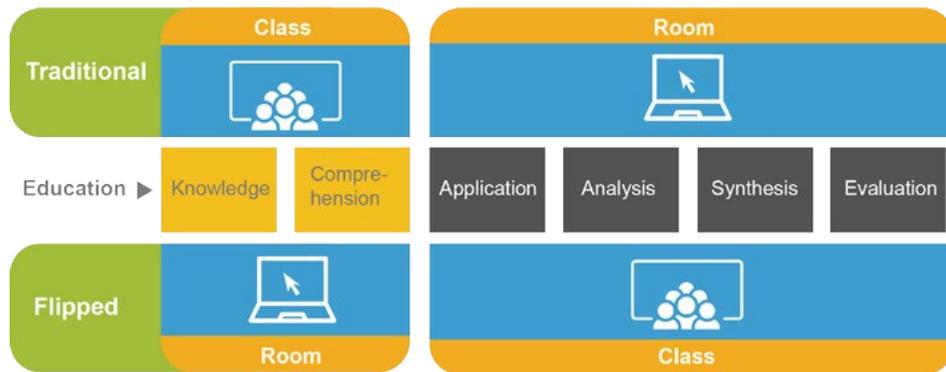


Figure 6: Traditional Classroom versus Flipped Classroom (© Simon Bruce 2019)

In practical terms the flipped classroom model seeks to capitalise on the shared knowledge, lived experience and diversity of thought (and background) of each member of the learning cohort. The challenge nevertheless remains with the flipped classroom model (just as it does for all learning models) as to how to effectively transfer the knowledge out of the room. With traditional learning models, this transfer outside the room requires the ability to apply the learning elsewhere during the educational process, prior to a real-world setting after graduation/qualification. However, for learners in a corporate setting, the environment outside the room is usually the workplace and the expected timeframe is usually immediate.

For the flipped classroom model, the challenge to transfer learning from the room also exists, however, this is where the use of social and collaborative learning practices and activities can come into play within the class. Supplemented by (arguably) minimal use of social and collaborative learning technologies, the learning transfer from the room, into the class, and then into the real world environment then becomes more assured and smooth flowing. Additionally, the prominence and prevalence of Prime Skills demonstrated by learners within class-based activities is essential for the learning activities and provides deeper understanding of the content. These Prime Skills are also fundamental to enabling transfer of learning beyond the class.

**This Fellowship report will argue that the explicit utilisation of Prime Skills in a structured manner, within a flipped classroom environment, coupled with social and collaborative learning practices can significantly enhance how this knowledge can be transferred and applied beyond the room.**

In the course of the Fellowship activities, numerous conversations occurred that highlighted practical real examples of the flipped classroom in a workplace setting. These included:

» [John Davis, Regional Managing Director, Asia, Duke Corporate Education](#)

Duke CE use the flipped classroom as a primary approach in their programs as it provides ample opportunities for Prime Skills to be incorporated into the discussions and activities in the class setting. Collaboration is a key focus, however, both communication and critical thinking also dominate, especially amongst senior professionals undertaking their programs. A skill becoming more prominent is centredness as learners often need to fully appreciate what they need to “let go of” in order to become more empowered (and/or to empower their team members).

» [Karina Kuhlman – Senior Director, Visa University Singapore, Visa Corporation](#)

The flipped classroom is integral to Visa University’s programs as participants come from across the Asian region and there is a significant need to maximise their time together in the learning environment. Pre-learning content is vital and it is distributed in a variety of media via the Visa LMS. This ensures that time spent in the collaborative learning spaces allows a full use of learners’ Prime Skills. These collaborative activities are taken to the next level by the university staff who schedule the same break times for all classroom sessions. This creates a social environment where learners from diverse backgrounds, in a cross section of roles, and with a vast range of experiences can freely communicate and mingle with each other. This enhances their critical thinking and for some, requires them to draw heavily on their centredness.

Additionally, a session attended at EduLEARN18 titled “A Flipped Classroom Experience in Management Learning” (presented by educationalists at Business School, Universitat Politècnica de Catalunya, Spain, Gemma Calleja Sanz, Mariona Vila Bonilla, Harold Torrez Meruvia, and Adriana Sauleda Palmer), highlighted that traditional classroom settings, with on-site theoretical lessons and autonomous work on practical activities, have been shown to be less effective than flipped settings, not only in developing students’ soft skills but also in consolidating theoretical concepts.

The case study presented focused on a Business Management course directed at undergraduate engineering. Students worked autonomously on theoretical topics and engaged in social and collaborative learning activities (e.g. an online forum where they can both pose their questions and also answer those of their classmates). When the students came together in the class they were able to clarify further queries regarding the theoretical topics, to work on practical activities with the help of the instructor, and to present the results of these activities.

Weekly online tests and three exams assessed students’ progress. Results highlighted that a flipped classroom setting was successful in regards to the academic achievement of the students and also with respect to the overall satisfaction (i.e. engagement) of the students with the Business Management course.

Another interesting presentation on the flipped classroom was delivered by Professor Lutz-Christian Wolf, a German law professor currently teaching at the University of Hong Kong. Professor Wolf has found that cultural differences can be significant when students are asked questions in the class setting. From his experience, Asian students were more compliant and willingly answer questions. However, European (especially German) students will potentially become aggressive and defensive when they are asked a question: they find it embarrassing.

## 4.5. Social Learning and Collaborative Learning clarified

### **Social Learning**

Social Learning is more than just using social tools.

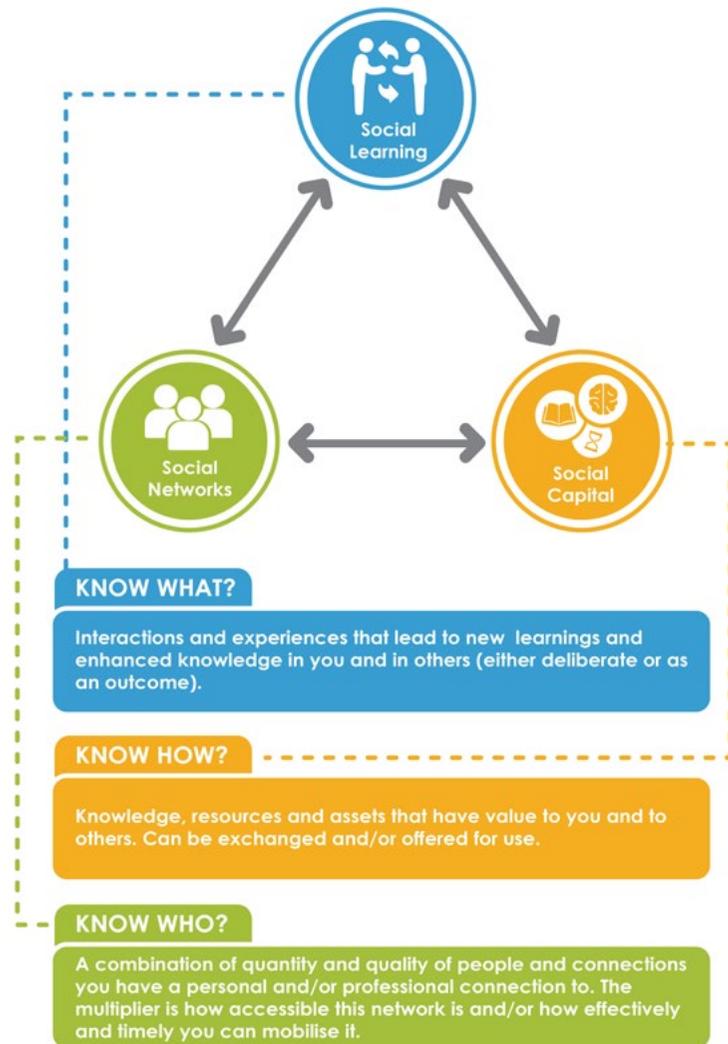
Social Learning means many different things to many people. The Fellow views Social Learning as both an input and an output of a dedicated activity where a person utilises their social networks and draws on their social capital.

When a person engages in and participates in social learning, it is not necessarily because they desire to undertake (or acquire) learning. Rather, it is because they seek to maintain or enhance their status and influence in the social networks and communities in which they have visibility. Additionally, the amount of social capital they have will directly influence their ability to draw on those social networks.

If a person’s social learning activities are the starting point, then social learning rarely is the intended outcome. If learning is the outcome from a social interaction, it’s a fringe benefit and not the intent.

**Essentially Social Learning is a matter of how effectively a person leverages their know how along with their know who to increase their know what.**

# SOCIAL LEARNING



An effective social network is one that is neither under nor over-exploited. It is drawn on respectfully and appropriately. Similarly, valuable social capital is neither under-utilised nor under-optimised. It should be used wisely as with all forms of capital.

The most powerful and enduring social learning experiences balance how well one connects with the people they know, to increase what we all know. Achieving this balance should ensure social learning is harmonious and fulfilling.

Figure 7: Social Learning - Know What, Know How and Know Who (© Simon Bruce 2019)

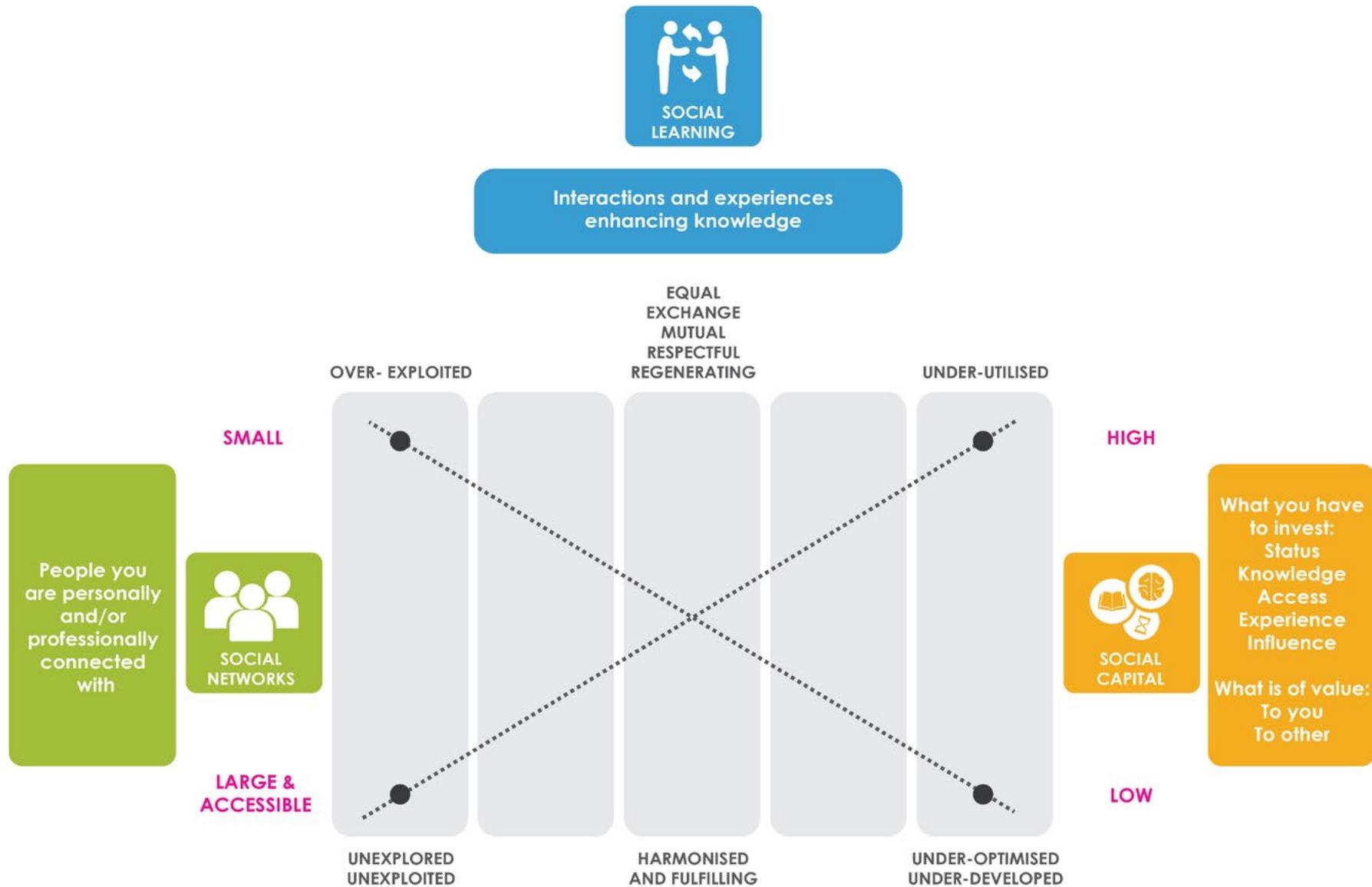


Figure 8: Social Learning - how to optimise it (© Simon Bruce 2019)

## Collaborative Learning

Collaborative Learning is more than just using collaborative tools.

Collaborative Learning typically is the output of a process that commences with an expressed intent to leverage the connections of a group in a workplace in order to meet a specific need, or to achieve a particular objective.

Collaborative Learning is the result. It is not the driver.

If the desire to engage in Collaborative Learning is the primary motivation, then the objectives being pursued run the risk of not being achieved. A fuzzy focus on an eagerness to learn collaboratively will derail the group.

**When the needs and objectives of the group are high and the groups' willingness to collaborate is also high then Collaborative Learning will come organically from good practices and a clear purpose.**



Figure 9: Collaborative Learning - Maximising Outcomes (© Simon Bruce 2019)

The group as a whole (or at least the influential members within the group) need to act on the intent to collaborate. The pace with which they collaboratively learn, and the value this learning provides, will be maximised when fit-for-purpose tools and technologies are combined with best practices.

## 4.6. Examples of Social Learning and Collaborative Learning enhancing Prime Skills – Case Studies from Future of Education Conference

Whilst many papers presented at both the Future of Education and EduLearn18 conferences highlighted the use of social learning and collaborative learning and their positive impact on Prime Skills, there are several examples that stand out. The Fellow was able to engage in deeper conversations with key contacts in each example. These conversations took place immediately after the respective conference session and also at various dates upon the Fellow's return to Australia.

### **Experiential Learning - Concrete Scotland: Concrete in the Classroom and Constructionarium**

At the Future of Education conference in Florence, Italy, the Fellow attended a session titled Experiential Learning: Taking Students out of their Comfort Zone presented by Dale Lyon, Director of Concrete Scotland.

An overarching objective of the initiatives undertaken by Concrete Scotland is to create real programs that industry can engage in, and to get students to learn without realising that learning is taking place. This enables programs to deliver on the business outcomes desired by client organisations. It also provides some deep learning in highly experiential settings that develops their key Prime Skills.

Dale's session provided an overview of two successful programs. The first, Concrete in the Classroom, is a 5-day experiential learning program conducted in partnership with industry. Concrete in the Classroom is a program that brings together a range of partners from education and business collaborating to improve academic skills and employability outcomes for young people.

Concrete in the Classroom delivers cross-curriculum learning through five construction related lessons and culminates in a site visit to a concrete factory or similar construction facility.

The objectives for the program include:

- » Create a learning experience which shows employability within the construction industry
- » Create lifelong learning skills and show how these materialise in future work opportunities
- » Help to create confident individuals who are successful learners and become an effective contributor and responsible citizen
- » Develop an awareness of career opportunities that may not have been referenced prior to the program.

Interestingly, the program also seeks to create an opportunity for schools to support the up skilling of their staff, so they can ultimately self-deliver the program as more schools join the program.

At the conclusion of the five lesson plans there is an industry supported visit to a construction related work environment. This brings the class learning to life, increases awareness of employment opportunities and forges stronger links between education and industry partners

The strong focus on collaborative learning throughout the whole program is a key feature of its success. The enhancement of learners' Prime Skills is also central to the curricula and helps shape how learners engage with each other, and with employers and stakeholders from across industry partners. As the program is closely embedded within the construction industry, learners are provided ample opportunity to use their Prime Skills in real-world situations. Both the social learning and collaborative learning activities further embed and enhance these Prime Skills.

The second initiative shared by Dale was the Constructionarium program.

Established in 2003, Constructionarium provides a hands-on construction experience for students and professionals; where participants construct scaled down versions of bridges, buildings, dams and civil engineering projects. The principle is to link academic institutes with industry and to ensure that the students are able to apply the knowledge they have gained in a practical, safe and relevant environment.

A triangular relationship is formed by an academic institution, a contractor and a consultant. They work in partnership to deliver a new learning experience which combines the academic perspective with those of the design professional and practical site delivery.

Designed to be part of a 21st Century engineering education, the program links the world of academic theory with contractors and consultants from industry: a hands-on construction experience for students and young professionals.

The students work in a controlled environment supported by both academic and industrial staff to provide a unique link between theory and practice. This provides the students with an authentic, real world experience.

A Constructionarium program runs for six-days with five-days spent on site, on a full-time residential basis. During the week, students are guided by a professional team through real construction projects, working typically at a scale between 1:20 and 1:10. At the end of the program, the students have gained substantial practical site based knowledge, skills and experience. They will also have dealt with a number of challenges that they will encounter in their future careers.

It is clear that collaborative and social learning activities are integral to this program. Students learn to work effectively as teams and to engage with key stakeholders and partners across the industry groups that are aligned to the program. Collaboration, and the learning it provides are as much a key feature of the program as they are a major output.

The learning methods employed in the Constructionarium program provide ample opportunities for substantial collaboration as well as social interactions that further enhance Prime Skills. These learning methods include a combination of experiential learning, project based learning and role-plays.

Key outcomes that the program provided were substantial for the industry and educational partners, and included increased collaboration across all sectors, greater student engagement and a greater transfer of knowledge, skills and expertise between professionals and those who define educational policies.

More significantly, key outcomes for students included the development of a wide skill set that encompassed technical, design and personal skills. Personal skills developed included confidence, communication, dealing with failure and unpredictability, adaptability and flexibility, leadership, valuing diversity, and working under pressure. As can be seen, central to these personal skills was the 5 Cs of the Prime Skills. It is also clear that the collaborative activities are a key contributor to the development and enhancement of the students' Prime Skills.

In one example shared during the conference session, students needed to collaborate in groups to build a bed and attempt to sell it to a village elder in remote Africa. This required the students to develop a pitch that highlighted the benefits of their product over that of their competing groups. However, just before making their pitch, the groups were advised that they could only make one pitch for the entire class cohort. This required further cooperation and more nuanced collaboration to decide which group's item was to be presented. The overall group then needed to master social media skills and tools to make a clear and articulate pitch to their client.

Both the Concrete in the Classroom and Constructionarium programs make substantial use of collaborative learning practices and enable students to draw on their social learning skills. Additionally, as was demonstrated in the structure of both programs and the activities undertaken by the students, their Prime Skills were extensively drawn on. The collaborative activities required students

to be creative and to apply critical thinking, and to be articulate and clear in their communication with partner organisations. This in turn enabled self-reflection and required students to focus on their centredness by drawing on their emotional intelligence and resilience as they encountered new experiences, and addressed unexpected challenges in real world circumstances.

### **Skills Development – Ryerson University, Toronto Canada: ADaPT (Advanced Digital and Professional Training)**

Another session at the Future of Education Conference, was presented by Brian Robson, Director, Business Development & Training Programs, Ted Rogers School of Management's Diversity Institute, Ryerson University in Toronto Canada.

Brian presented a case study to share the successes being achieved with the ADaPT program, which seeks to provide students with a combination of digital skills and professional training in key concepts that are crucial to gaining employment.

Essentially, ADaPT is a skills development and work placement program aimed at bridging the employment gap for recent graduates. ADaPT provides over 70 hours of hands-on workshops in a range of topics including digital literacy, communications, research, business financials and career skills. A primary objective of ADaPT is to help new graduates compete for paid work placements (although these are not guaranteed). The program was developed as a direct response to research that found a mismatch between skills being sought by employers and what skills graduates actually possess.

#### **The Fellow refers to this as the skills taught/sought mismatch!**

Interestingly, Brian noted that students self-rated their professional skills more highly than their employers did.

The ADaPT workshops are free and run for approximately 7 - 8 weeks, normally on evenings and Saturdays, during which participants receive:

- » Enhanced employment prospects and coaching on resume preparation, interview skills and career development tactics
- » Boosted self-confidence and tactics to navigate the hidden job market
- » Connections with top employers and guidance to potentially land a paid job placement

An obvious key aspect of ADaPT is social interaction and collaborative activities, these provide powerful opportunities for participants to use (and further enhance) their Prime Skills.

Applicants must be recent post-secondary graduates (or, in some cases, in the final year of study). Importantly, they do not need to be a Ryerson student or alumni to apply.

Participants are from diverse professional and academic backgrounds who possess research skills, critical thinking skills, communication and analytical skills. The program expands and embeds these skills and supplements them with advanced digital and professional training. The ADaPT program focuses training students in areas that include project management, financial analysis, social media analytics, big data, applied research, Microsoft Office, Adobe Suite, etc.

The program is competitive, and students are required to submit an application before they are accepted.

ADaPT is a great example of social learning as it consists of what Brian referred to as "cohort-based learning". This involves a group of diverse learners participating in a learning and development program (consisting of several sessions within a short time-frame) together in a live or face-to-face setting.

As the ADaPT program is primarily focused on skills development, and given that it utilises both social and collaborative learning practices at its core, the potential for the program to enhance and develop Prime Skills is great. This has been

supported by the findings gathered via program feedback and evaluations from both the student cohorts and the partners involved in the program activities.

The demographic, academic and thought diversity of the cohorts contributes greatly to the outcomes achieved via the use of critical thinking, communication and creativity skills in particular. When students learn with others who are much different from themselves in a safe, positive but intensive, self-motivated context, these Prime Skills are sharpened. A key finding of the program is that diversity is vital for collaboration and for effective collaborative learning.

The voluntary nature of the program makes it important to create a 'high-touch' or personalised culture where each participant feels welcomed, accepted and valued. This is achieved through providing opportunities for participants to be social with each other and with the academic staff. This reinforces their learning and allows them to leverage and deepen their Prime Skills.

### **Humanities used to re-humanise education – Knowledge Economy Forum, Vilnius University, Lithuania: Multi-Subject Teaching**

At the Future of Education Conference, the Fellow met (and has subsequently engaged in numerous conversations) with Mindaugas Grigaitis, a lecturer of Vilnius University Kaunas Faculty. Mindaugas is also a key contributor to the Knowledge Economy Forum (KEF), a professional non-profit, located in Vilnius, Lithuania with more than 50 members representing research, innovation and education areas. KEF brings together politicians, researchers, industry experts and citizens, and acts as a think-tank / debate platform for the country's societal and economic progress in the areas of knowledge society, innovation and education.

Mindaugas' passion for humanities is infectious; he sees a firm need to humanise the educational system. He believes it is important to emphasise that students are not merely statistical numbers on a path to becoming a member of the workforce. Rather, students should be seen as unique entities of thoughts, feelings and

emotions. (In other words, entities requiring a capacity for Prime Skills). As such they need to learn by expressing their humanity and they should be exposed to the humanities whilst studying other disciplines.

A key focus for Mindaugas is the important role humanities subjects, especially literature, can have in the educational process. He shared numerous examples of taking students out of the typical classroom setting and applying the 70:20:10 approach with experiential learning opportunities. His programs also make extensive use of the flipped classroom method where students were asked to do pre-reading of a major piece of literature (in one example, *All Quiet on the Western Front* by Erich Maria Remarque). He then led a field trip to a war museum and engaged in collaborative discussion about the text and the museum displays. This enabled students to use several of their Prime Skills such as collaboration, communication and centredness. Reflective activities allowed students to draw on their other Prime Skills of critical thinking and creativity when they were asked to relate their exposure to humanities back to their core discipline.

Social learning activities are integral to this program as students engaged in learning from more experienced people who helped provide exposure to Prime Skills. Additionally, the social aspect of the learning enabled learners to observe society and learn to adapt their Prime Skills as is necessary.

Additionally, collaborative learning was a key activity in these programs given that students worked in teams and had to solve tasks by sharing responsibilities, and through finding common attitudes and strategies to achieve the best outcome. As a result, students learned not only abstract academic issues, but gained crucial personal competencies.

Mindaugas' aim is to make school curriculum more integrated across disciplines and for all courses to include a range of humanities topics. As he articulated, "Integration opens wide opportunities to teach Prime Skills. Contemporary individuals need various competencies, so if we teach students to understand connections of separate subjects this will lead to higher skills, such as critical

thinking or creativity. Integrated curriculum would open wider field for social learning and collaborative learning.”

## 4.7. Case Studies from EDUlearn18 Conference in Majorca, Spain

### **Supporting Lifelong Learning through development of 21st Century Skills**

Presented by Nour El Mawas and Cristina Hava Muntean, lecturers at the National College of Ireland, this study focused on the rate of technical change and the impact on knowledge, skills and competencies. The study was directly aligned to the skills dilemma introduced earlier in this Fellowship report. The key focus of the study promoted lifelong learning in a time of rapid technological change.

The study highlighted the many benefits of lifelong learning including increasing job prospects by supplementing professional competencies, improve memory, enhance self-esteem, adapt to societal changes, and remain socially active. The importance of social learning and collaborative learning are integral to a successful lifelong learning approach. Additionally, it is evident that the importance of Prime Skills is an integral part of the study's outcomes.

The study also highlighted the value of several learning approaches including: problem-based learning, flipped classroom, serious games, self-directed learning, computer supported collaborative learning and personalised learning.

### **Learning from the crowd: when executives share their knowledge in a flipped teaching class**

Presented by Pierre Mora from the KEDGE Business School, France, the seminar shared an experience of flipped teaching that incorporated collaborative learning tools both before and during the class activities.

The marketing seminar context was presented to a group of 40 executives. Prior to the three-day seminar each executive received a self-audit questionnaire relating to a product or a brand. The executive then uploaded their results onto an LMS platform, and the results were evaluated by the educator.

During the seminar, participants formed into groups of four. An inter-industrial exchange is undertaken within the groups to share knowledge on the product or brand. This enables each group to contribute to a “wall of sharing” utilising the PADLET application. The educator then animated this data via PADLET to seek convergences and divergences between the groups. Each group was asked to comment and react to the presentations of the other groups. Thus social and collaborative learning is optimised by the “learning by the crowd” activities that draw on a nuanced use of technology.

Sharing perspectives, critically thinking and communicating clearly are all strong components of the class activities. The outcome is often a heightened ability to think creatively about an issue or a problem.

### **Cities as connected learning ecosystem: Pittsburgh's Remake Learning Network**

Presented by Sunanna Chand, Director, Remake Learning, USA. Ms Chand's engaging presentation showcased the innovative work being undertaken by the Remake Learning initiative, in Pittsburgh.

The Remake Learning Network, now with over 500 organisations from every sector, was formed in 2007. The network has played a pivotal role in Pittsburgh building a connected learning ecosystem around innovation and is a model that can be replicated by other cities.

A primary focus of Remake Learning is ensuring learners have the right skills that are required for cities of the future. As Sunanna explained: “We're in the midst of an era of profound change. Tomorrow's graduates, by and large, won't assemble

cars; they'll design the computers that drive them. They'll be tasked with tackling climate change, food shortages, and inequality. They'll be asked to solve problems on a global scale - problems for which, unlike on the assembly line, there are no set standards. They'll need to think critically, work collaboratively, and communicate effectively across countries and cultures. As adults, it's our responsibility to give every child the tools they need to pursue their passions and meet the demands of the modern world - but no one person or organization can achieve this alone. We believe that doing this calls for a new, more expansive, more connected approach to learning that bridges organizational silos."

The Remake Learning Network actively encourages cross-sector collaboration. To achieve this a circular structure is maintained to allow people, knowledge and information flows to move easily and naturally between all entities. Learners are kept at the centre of this structure and remain the primary focus at all times. Communication and creativity are core elements of the network, which has expanded to include 130 schools, 27 libraries, 18 museums and 38 community centres.

### **Redesigned collaborative learning environments – staff use and perceptions**

Presented by Dr Bronwen Swinnerton, - Research Fellow in Digital Learning, University of Leeds United Kingdom.

The University of Leeds, recently redesigned three lecture theatres as Collaborative Lecture Theatres (CLTs). The lecture theatres have been reconfigured in their design and in their use of technology. Importantly, a decision was made to retain the tiered nature of the spaces and to reconfigure the seating to allow for groups of five students to sit in a 'pod' around a desk. This configuration allows all learners to have a good 'line of sight' to the front of the room. Each desk is equipped with an internet-enabled laptop, microphone, speaker, spotlight, HDMI input and USB charger and power. The front of the room retains the traditional lectern-based

PC, a control panel, lecture capture camera and controls, a lapel microphone, a whiteboard, dual projectors and a presentation wall.

University staff from across all facilities used these redesigned rooms extensively throughout the academic year. An evaluation was undertaken that focused on both staff and students who used these lecture theatres.

A significant finding was the collaborative activities increased substantially in these CLTs. Group interaction, communication and conversations requiring critical thinking were key outcomes in the evaluations. Interestingly, feedback from teaching staff was split between those who actively requested to use the CLT whom enjoyed the teaching experience far greater than those teachers who were compulsorily scheduled into the CLT.

All teachers reported that they were required to rethink their teaching strategies and to deeply consider what activities the students would undertake.

For some teachers, collaborative learning allowed them to further enhance their own Prime Skills, particularly surrounding creativity and centredness (having to remain emotionally intelligent and resilient in the face of a new teaching environment).

## **4.8. Site Visits to see how Social Learning and Collaborative Learning are enhancing Prime Skills**

### **Tunnelling and Underground Construction Academy (TUCA) – Ilford UK**

The Fellow visited TUCA to advance discussions between TUCA and the Fellow's host organisation toward the establishment of a Victorian Tunnelling Centre. The Fellow also sought to identify examples of how Prime Skills (and leadership skills) are being enhanced within the learning context. This was done, in part, to explore

the findings presented in the McKinsey Whitepaper, The art of project leadership: Delivering the world's largest projects, McKinsey Capital Projects & Infrastructure Practice, September 2017.

Conversations with Ms Urte Sonnenberg, Head of Commercial CPD, and Mr Brian Cairns, Consultant, included discussion surrounding the importance of providing experiential learning activities for participants using equipment and machinery that replicated a real world construction site. This is important as working in the confined space of a tunnel construction site heightens the need for safe work practices and mindsets. Operators of machinery and equipment need to be aware of how to correctly and safely use the equipment and to do so confidently.

An additional feature of such extreme work environments is the need to work collaboratively and to remain aware of one's surroundings both in a day to day context and in an emergency situation. Therefore, the Prime Skills are crucial for these workers and need to be enhanced as much as possible. The learning activities at TUCA used a combination of classroom and theoretical sessions, coupled with experiential activities, in an environment that duplicated an underground work situation. A simulated tunnel was incorporated into the design of TUCA and was used extensively by students to provide firsthand experience of a dark, confined environment. Within this setting, students are able to apply the skills learned within their trade.

Another simulated tunnel was developed to provide an opportunity for students to experience the need for a safe and orderly evacuation in complete darkness. Unannounced drills were conducted for groups of students whilst undertaking practical skills sessions in the simulated tunnel. The lights were turned out without notice and the students found themselves in a pitch black environment. They needed to quickly put on their breathing apparatus and then undertake an orderly and safe evacuation out of the tunnel, being aware of their own safety and that of their fellow students. This required they remain calm and focused on their own safety training and to work collaboratively throughout the evacuation exercise.



Figure 10: Simulation Tunnel at TUCA Figure 11: Practice evacuation tunnel at TUCA

The focus on Prime Skills, whilst perhaps understated, is nevertheless integral to the way TUCA designs and delivers its programs.

**The Fellow believes this focus should be more explicit and a key feature of how training is to be designed, developed and delivered as part of the Victorian Tunnelling Centre.**

### Visa University – Singapore

The Fellow visited the Visa University located within Visa Corporation's Asian-Pacific Head office in Singapore.

The Fellow was invited to Visa Corporation by Chris Clark, Group Executive, Asia Pacific for Visa, who arranged the tour to the Visa University where the Fellow met with Karina Kuhlmann, Senior Director, Visa University Singapore, and Anouk de Blicq, Human Resources Lead, Asia Pacific. Their discussions focused on how a major corporation is able to provide a rich combination of compliance-related skills and knowledge, and balances these with key skills that enable employees from diverse geographic backgrounds to work together in a collaborative manner.

The purpose-built facility features flexible classroom space, breakout rooms for small-group learning and lounge space for informal networking. It also boasts cutting edge video conferencing technology, which extends the reach of Visa University Singapore across the Asia Pacific region.



Figure 12: VISA University – entrance. Figure 13: VISA University - breakout space

The Visa University is also home to The Visa Singapore Innovation Centre which aims to bring the best of the region and Visa's global network to its partners. The 7,000 square foot facility was built for partners to come together in a collaborative environment that provides opportunities to:

- » Get Acquainted (1 hour): Through a series of experiential demos, and a hosted tour that explores the trends driving the future of commerce, and how Visa's network capabilities can drive partner's businesses forward
- » Discovery Engagement (2 hours – 1 day): Explores trends and technologies impacting a business followed by open discussion to identify and prioritise opportunities to innovate in solutions
- » Co-Creation Engagement (1 day – 3 days): Apply human-centred design and agile techniques to design and build innovative new concepts.

The VISA University provides a rich example of how collaborative learning environments can create a learning ecosystem amongst all stakeholders. It is also an example of how collaborative learning can enhance Prime Skills such as creativity, critical thinking and communication. The Fellow views this as an example for the VET sector in becoming more aligned to industry, and building their own ecosystems that will enable social and collaborative learning opportunities.

## 4.9. Micro-credentials – relevant and timely

Parallel to the increased focus on skills needed for the 21st Century, and in particular the need for Prime Skills, there has been a significant rise in micro-credentialing.

What are micro-credentials?

One definition comes from DeakinCo who have undertaken extensive promotion of the importance of micro-credentials. "Micro-credentials are a formal recognition by an authoritative, independent third party that has assessed and judged that a person through experience and workplace performance has achieved a particular professional capability".<sup>1</sup> So, if credentials recognise capabilities, what are capabilities? Capabilities "specify a standard expected in professional practice. They represent a holistic view of an individual's ability to perform in a range of contexts and their potential to improve."<sup>2</sup>

Micro-credentials are becoming increasingly important in a professional context, however, more thought needs to be given in educational institutions, especially in the VET sector, to explore strategies that will make micro-credentials more accessible and more prominent in the programs offered.

As previously mentioned, many large organisations (Apple, IBM, Google) are no longer seeking graduates with tertiary and higher education qualifications.

1 Demystifying Credentials: Growing Capabilities for the Future, DeakinCo, 2016

2 Ibid

Others, such as PricewaterhouseCoopers are employing recent school leavers prior to entering tertiary programs. They are then offered higher-apprenticeship placements which provides opportunities for them to study a Diploma of Business while they are employed full time. This is partially effective as there is still an expectation of undertaking a complete qualification aligned to the AQTF standards and structure. This study must be undertaken alongside a fulltime work schedule, which can prove to be quiet challenging. The Fellow believes that these programs may not be providing the right outcomes and suggests they would be better suited to providing micro-credentials on targeted skill sets, particularly Prime Skills.

On another front, the increased prominence of MOOCs<sup>3</sup> has made learning more accessible (and perhaps less valued). With MOOCs, learners are able to gain knowledge and skills on a range of subjects in small, bite-sized, highly consumable chunks. However, questions surrounding how valuable and worthwhile these MOOC learning activities are. Some have questioned whether MOOCs have reached their peak-relevance. MOOCs occasionally result in micro-credentials, but often they do not, a further challenge to the relevance and transferability of the knowledge and skills obtained.

MOOCs are undoubtedly an important way to make learning more accessible; the challenge will be to make the content of MOOC programs relevant, accurate, current and engaging. The Fellow often refers to this as R.A.C.E. (the RACE for learning – ensuring the right learning is delivered quickly and effectively). The learner and educator should share the perspective of this approach and simultaneously target topics that have the greatest relevance and importance. The development of Prime Skills should be paramount when selecting these topics.

In other words, educators should be micro-credentialed in Prime Skills and all learning programs should provide Prime Skills micro-credentials explicitly in their design and content. More important, Prime Skills micro-credentials should be incorporated in the learning delivery and should be integral to the way the educator delivers the program, conducts the activities and assessments throughout the learning topic.

Furthermore, these Prime Skills micro-credentials could easily align to social learning and collaborative learning activities, and would easily become visible via social learning and collaborative learning platforms and online tools. For example, an online conversational thread involving several students discussing their reflections and observations on a learning activity could easily be assessed by educators for evidence of collaboration, communication, creativity and critical thinking. Another example could involve students creating a wiki-page or a simple website as part of an assignment that could be assessed for their use of creativity, communication and critical thinking.

Cross referencing this with the flipped classroom model could see students awarded micro-credentials aligned to Prime Skills based on the evidence gathered from assessments while undertaking learning activities in their room (via online social and collaborative learning platforms) and during classes (via social and collaborative learning practices and interactions).

These Prime Skills micro-credentials could then be displayed on a learner's online profile via the relevant LMS of the learning institution or organisation (if the learner is an employee). They could also be displayed on their online profile (e.g. LinkedIn) and included in their resumes.

For educators, their micro-credentials in Prime Skills would be displayed on a learning institution's marketing material, and appear alongside their identifiers and profiles on the social learning and collaborative learning platforms that are used by the students during the learning activities. This could develop the student's confidence in their educators; that the assessment of Prime Skills is carried out by those with the required standard of knowledge, expertise and credentials. This would aid in reinforcing the relevance of Prime Skills, the importance of the micro-credentialing process, and achievements overall.

The Fellow participated in numerous conversations on micro-credentials during the research phase of this Fellowship report. These included extensive discussions via Skype and extended email exchange with John Stone, Senior

Associate Dean, and Ryan Anderson, Senior Director of Instructional Design and Academic Technologies, both from the University of Wisconsin-Extension (UWEX) in Madison, Wisconsin.

UWEX is the managing partner of the University Learning Store. ULS operates across several educational institutions in the USA and includes:

- » Georgia Institute of Technology
- » UC Davis Continuing and Professional Education
- » University of California, Irvine
- » University of California, Los Angeles (UCLA) Extension
- » University of Wisconsin Extended Campus
- » University of Washington Continuum College
- » University of Wisconsin-La Crosse

These institutions have come together in a first-of-its-kind partnership of non-profit universities dedicated to delivering online, on-demand, skills-focused courses and credentials that meet the needs of 21st Century employees and employers.

The ULS is an online marketplace of learning and badge assessments allowing learners to earn credentials for a variety of professional skills. These offerings are aimed at entry-level employees looking to fill a gap in their resume, but are equally applicable to a seasoned executive needing to learn a new skill in order to remain current. The resulting micro-credential provides proof of their skill to employers.

ULS was initially established to provide micro-credentials and sell them directly to consumers (i.e., University to Consumer). However, they are creating new content that will shift towards addressing the needs of members of for profit and not-for-profit institutions (i.e., University to Business). John noted that part of this shift was necessitated by the realisation that their co-member collaborating institutions had not been as active in creating content for the ULS as UWEX. As part of this

revised business model, they have also commenced foundational conversations about micro credentials, and standards affiliated with awarding them.

As the lead university in the consortia, UWEX has undertaken extensive research and discovered that those awarding credentials need to be given credentials by a suitably accredited authority. Their research also revealed that it was often too easy for learners to get credentialed and there was inconsistency between providers of micro-credentials. The UWEX Dean appointed to work with ULS quickly realised that the logos of the other universities needed to give credibility and legitimacy to the ULS concept. In other words, the macro badges and credentials at the institutional level were needed to convince learners to seek micro-credentials and badges at the individual level.

Initially the contribution from the other universities was not strong. This resulted in the ULS being, as John stated “like a department store in East Germany with aisles of empty shelves”. However, much has happened to revise the business model of ULS over the past year, and there is now a greater variety of programs that offer credentials and a wider contribution from the member universities.

Credentials in ULS are grouped in three categories:

1. **Power skills** include competencies in communication, teamwork and collaboration, critical thinking, problem solving
2. **Technical skills** include industry-specific, and in some cases job-specific, skills in information technology, business, agriculture, health care, sustainability
3. **Career advancement skills** include topics such as leadership, public speaking, management, and negotiation

As is clearly seen, these three categories incorporate the majority of the 5Cs of Prime Skills.

Learners undertaking ULS provided courses earn credentials by demonstrating their knowledge through assessments consisting of hands-on, skills-based projects that resemble real-world business scenarios. All credentials offered by ULS have been verified by employers to ensure they are representative of the competencies (skills and knowledge) required in today's workplaces.

When students pass all the badge assessments in a skills track, they earn a certification that carries the name of the issuing institution.

Some organisations are seeking to provide micro-credentials directly to their learners. The Fellow experienced an example of this at VISA University: senior participants from across the organisation attend leadership programs where they are required to present a series of key learnings to their stakeholders. After being assessed as achieving the desired level of capability, these participants are then awarded a presentation skills credential. They are then able to promote the digital badge on their online profile used across the organisation.

However, the Fellow believes there is an opportunity to shift the focus of this model to learners that are pre-qualification and to embed the model within a learning institution (as outlined above).

There is also an opportunity to embed micro-credentialing for educators, similar to the system proposed by Digital Promise, a US-based eLearning provider that "seeks to spur innovation in education and improve the opportunity to learn for all through technology and research". Digital Promise have developed an educator micro-credential ecosystem that provides educators with recognition of the skills they develop throughout their careers, regardless of where or how they attained them.

This includes a process that enables the educator to:

1. **Select:** Select a skill they have developed or would like to develop

2. **Collect:** Collect the required evidence demonstrating their competence in the selected area
3. **Submit:** Upload and submit their collected evidence
4. **Share:** Share their micro-credential as a digital badge

The system developed and managed by Digital Promise currently has approximately 55 educational institutions issuing credentials.

**There would be an opportunity to refine this model and focus it principally on Prime Skills and develop a robust program for assessing evidence and providing additional opportunities to demonstrate a particular Prime Skill at a level of mastery.**

Embedding this model within a particular institution or across the educational sector, would ensure consistency and uniformity of Prime Skills in educators, and would ensure these skills were integral to all programs designed, developed and delivered by educational institutions.

## 4.10. Additional Attribute to Consider: Authentic Assessments

The challenge for many learning programs (especially those leading to a formal qualification and/or a recognised credential) is how effectively the learning can be assessed. With regard to assessing Prime Skills, this challenge is heightened. One approach to effectively assess a learner's critical thinking, communication and collaboration skills is to undertake an authentic assessment.

**Authentic assessments entail shifting assessments from what students need to know towards what they need to do.**

With authentic assessments, students are asked to perform real-world tasks to demonstrate a meaningful application of a skill.

To authentically assess a student's Prime Skills, a range of activities could be instigated including:

1. Having students pose a question on an online collaborative forum (such as Slack) to initiate a conversational thread with other students. This would help assess an entire cohort's ability to communicate, collaborate and think critically. It could also show aspects of their creativity and their centredness
2. Require students to create a website (e.g. via Wix) to present their learning task in a clear and creative manner
3. Observe students as they deal with a rapidly changing set of circumstances that positions an ever-increasing complex issue. This would enable their centredness and creativity in particular to be assessed authentically
4. Pose a scenario to a group of students with a number of conflicting, yet unpalatable, options. This would also authentically assess their centredness along with their communication, collaboration, critical thinking and creativity skills.

## 4.11. Common Features across all Examples

It is evident that from each of the examples shared above (the case studies, the research findings, the learnings from the site tours, the outcomes from the conversations) educationalists (teachers, lecturers, designers, and industry-based facilitators) need to embody Prime Skills at a high level.

Additionally, students, learners, and participants need to be able to look to these professionals as role models to determine how the 5Cs of the Prime Skills should

be demonstrated, and when they should be invoked. This highlights the importance of educationalists having consistency and high quality in these Prime Skills.

## 4.12. Developing a new model: Consequential Learning

The Fellow has been developing and refining the Consequential Learning approach over several years. There have been a number of trials of the model via learning solutions for clients in the insurance and disability services sectors. Recently, the Fellow has been able to apply the approach to a major initiative for a significant infrastructure project. This has resulted in some valuable feedback and data to support how effective it can be in delivering core learning outcomes as well as significantly enhancing the Prime Skills of the learners.

Essentially, the Consequential Learning approach incorporates the key elements of social learning and collaborative learning practices, as well as blended learning, and uses the flipped learning model with pre-learning being undertaken prior to class-based activities led by a facilitator skilled in adult learning.

### **Consequential Learning Approach explained**

In an organisational learning setting, to most effectively position the importance of a learning initiative to all targeted stakeholders, a learning campaign can be implemented. The learning campaign will typically constitute three separate phases: Pre-learning, Facilitation and Post-learning.

In a vocational (as well as secondary and tertiary) learning setting, this learning campaign would be represented by the curricula of unit or subject being undertaken. Therefore, the Consequential Learning approach is highly adaptive to all learning settings.

Conducting the pre-learning phase online will ensure the most relevant content is pushed to the correct learner at the most appropriate time. These learning materials typically include key concepts, models and theory that position the content. Most learning programs then expand on these materials with additional online content available to individual learners as needed. This is normally via a post-learning phase.

The Consequential Learning approach includes a transitional phase that contextualises the content and presents a structured flow of topics and information aligned to the pre-learning materials. This is done via facilitated sessions that make use of a fully blended learning approach that utilises visual learning presentations, incorporating scenario-based online modules, depicting real-life activities.

A key focus of the Consequential Learning approach is that it draws on the Prime Skills of both the facilitators (educationalists) and the participants (students). Consequential Learning is an excellent example of how collaborative learning and social learning can be optimised in the correct setting. The Consequential Learning approach makes minimal (albeit subtle) use of technology and critically shifts the focus on participant interaction and conversation.

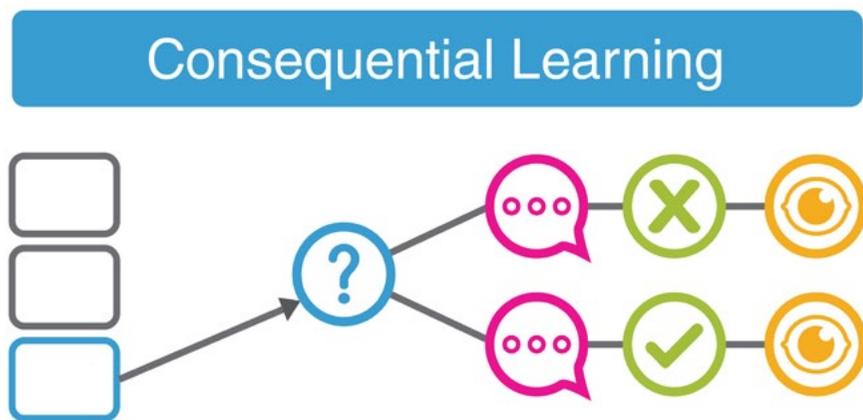


Figure 14: Consequential Learning Approach (© Simon Bruce 2019)

An example of how this works is described below and represented in the accompanying visual:

- 1 A brief visual presentation is shown to the group depicting a scenario relating to the learning topic. This presentation would use a similar narrative and characters as those used in the pre-learning activities
- 2 The presentation concludes with a decision point being reached
- 3 A question is posed to the group by the facilitator and a decision is requested. The group discuss the scenario and then makes a consensus-based decision
- 4 The next step in the scenario is then revealed along with the consequence of the group's decision
- 5 A deeper discussion is then led by the facilitator to unpack the consequences of the decision by referencing content from the pre-learning and new concepts introduced, as well as the different perspectives and past experiences from the participants
- 6 Further reflection and group discussion occurs as needed to ensure the key learning outcomes are achieved



Figure 15: Consequential Learning - The Steps (© Simon Bruce 2019)

Consequential Learning is designed to create an authentic learning experience with rich discussion contextualising the topic. It moves beyond mere discussion about content. The experiences, perspectives, thoughts, insights and observations from each of the participants are called on by the facilitator to help work through the decision point. The conversations that follow not only advance the knowledge of all, but they allow self-reflection and deeper insights to be acquired on an individual level.

Once consequences (both positive and negative) are revealed, participants are able to more readily connect the content with their real-life situation, and they begin to develop strategies to plan actions to embed and apply the learning.

Collaboration and communication are obviously at the core of Consequential Learning, however, critical thinking is also extensively engaged by participants. Scenarios can be deliberately designed to be confronting and/or challenging in a number of respects. This can increase the need for participants to draw on their centredness as they need to use their emotional intelligence and resilience to effectively and respectfully present their point of view whilst remaining open to different viewpoints and perspectives.

### **An Example: Cross Yarra Partnership Project Induction Program**

The Fellow has led the design, development and implementation of a major Consequential Learning program for a client responsible for delivering a significant infrastructure project. Cross Yarra Partnership (CYP) is constructing twin 9km rail tunnels and five underground stations beneath Melbourne's central business district. Due for completion in 2025, the project has a significant workforce profile that required CYP to induct and onboard employees, contractors and sub-contractors from its many project partners. As part of this challenge, CYP are seeking to engage, inform and empower their entire workforce and provide exposure to the vision, values, and the scope of the project, as well as emphasising CYP's commitment to sustainability, to the community, to disadvantaged employees, to the environment and to social engagement.

CYP saw the obvious benefits of how a Consequential Learning approach applied to their specific content and situation could address these multiple aims in a stimulating and engaging environment.

To date, over 285 sessions have been delivered to in excess of 4,040 participants. All participants are required to undertake a 2-3 hour online pre-learning module (i.e. via the flipped learning model). This is expanded on in the half day, facilitator-led

classroom sessions where branching scenarios are presented that contextualise and interweave content from across six key areas of information.



*Figure 16: Consequential Learning - Discussing a Decision Point in the Class*

Significantly, these participants are from all roles across the CYP workforce, which will peak at close to 6,000 over the life of the project. Classroom sessions have seen participants with 20-years construction sector experience sitting side-by-side with internationally-educated professionals as well as apprentices on their first day of work. All participants have opportunities to draw on their experience and share their perspective on a number of challenging scenarios that are introduced by the facilitator. The groups make a decision and it is up to the facilitator as to how the "correct" outcome is revealed and how the resulting conversation occurs. Importantly, no two sessions are the same, (which is a significant bonus for the three facilitators rostered onto deliver these sessions).

Analysis of the quantitative data captured by Level 1 Evaluation sheets shows that 95% of participants found the program to be either extremely effective or very effective in achieving the learning outcomes. Additionally, anecdotal feedback provided by participants has been overwhelmingly positive. An estimated 4,800 separate items of written feedback have been captured and categorised into positive, neutral or negative. The clear results indicate that 97% of these comments are positive, and many overwhelmingly so.

Some examples of these positive comments are shared below, essentially because they highlight the focus of the program on enhancing Prime Skills both in their application during the class sessions, and in their further development during the activities. Whilst these comments are too numerous to share, a snapshot of a range of responses reveals the importance of Prime Skills, the value of the social and conversational environment created in the class setting, and the importance of collaborative learning.

Sample of comments supporting the enhancement of Prime Skills by Consequential Learning	
Thought-provoking and refreshing.	The induction is genuinely setting the scene for a team-focused, collaborative project.
Was different to other inductions I have attended. Initially I was a bit resistant to the format, but realised the value in having the challenging and deep discussions.	Engaging and unlike most inductions that seem more obligated to tick the box. This seemed to really promote discussion and create culture.
Very good and interesting. I liked that it was full of discussion and hearing other people's thoughts and experiences.	Interesting and thought provoking. It was not what I expected.
Best project induction I have done.	Certainly the best format for an induction that I've attended. Very interactive and thought provoking for both managers and operatives.
Excellent communication. Involved us in conversation, allowing everyone to speak.	Conversations and debates about scenarios was interesting to get opposing views
Presenting the concepts as scenarios made them realistic and made the learning more personal.	Great to be with different people makes the whole session more understanding and easier to see what the scenarios are like from all angles.
It challenged the room by opening the doors to think outside the box.	Informative and involved the team, which helps understand the different views.

### Sample of comments supporting the enhancement of Prime Skills by Consequential Learning

Interactive and a good combination of case scenarios and actual stories from participants.	Diversity of group allowed for various scenarios and experience to be discussed.
Easy to participate and no stress about having the right or wrong answer.	Great interaction. Gives ability for everyone to share stories.
Group discussion enables a broad range of opinions and knowledge.	Good to meet fellow workers and know their history.
Good collaborative process and discussion.	Educational and thought provoking.
This works well with small groups of people who contribute. With large groups who are not likely to speak up it may be difficult.	Interesting and engaging. It tackles subjects that can actually happen onsite.
Interesting, clever and interactive.	We all felt comfortable with each other given the diverse areas we come from.
It was good to hear other points of view from other people on how they will approach situations.	The most engaging induction I've attended.
I enjoyed hearing other's perspectives completely different from my area.	More practical than theoretical was effective.
Very interactive and collaborative.	Interactive without being intrusive.
A quality program that will help change the culture of the site.	I liked that it was interactive and actually required by all people to think and be engaged.

## 4.13. Challenges and Issues that will impact implementation

Some challenges exist that will impact the successful implementation of a Consequential Learning approach. These challenges include:

1. Skill and the will of educators.

As mentioned in the case study that discussed the use of collaborative teaching theatres, if an educator doesn't have a free choice in how their learning experience is delivered, it may negatively influence their commitment towards achieving success.

2. An over-reliance on technology can be dangerous, especially if the technology is mismanaged and/or there is a lack of human interaction. The Fellow observed how an audience of several thousand conference delegates in Singapore quickly became disengaged during a televised keynote speech that experienced issues when receiving an image on the screen from the US. Delegates quickly turned to their personal devices to entertain themselves as the conference IT staff desperately tried to remedy the situation. As the minutes wore on, the delegates became more engrossed in matters other than the topic. This extended beyond the technology issues being resolved as many delegates continued to remain focused on their personal device.
3. Technology providers may have their own agenda (dependant on the IT budget/commitment to IT by the learning institution).

A poor experience with the user interface, a sluggish bandwidth or even outdated software/hardware can damage a learner's experience. Equally, over-complicated systems, distracting user interfaces and too much reliance on irrelevant features can minimise learning outcomes. Often tools and technology purporting to facilitate social and collaborative learning situations possess these elements.

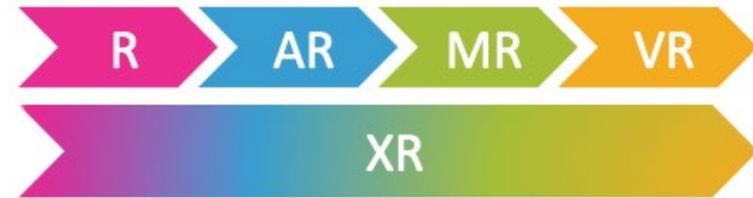
Therefore, the best use of the Consequential Learning approach will make minimal (but appropriate) use of technology. Essentially, this will be during the pre-learning phase. The class-based activities use fit-for-purpose technology, such as Articulate, to deliver the scenarios.

4. A flipped classroom approach is dependent on the pre-learning being distributed at the appropriate time prior to the class activity and it being viewed/accessed as required. When this goes wrong (either through poor planning and coordination or by IT issues) it negatively impacts and potentially compromises the entire session's learning experience e.g. the pre-conference workshop at EduTech which was ironically about the flipped classroom.
5. The rise of alternative realities is having an increasing impact in the world generally, and in particular in the training and L&D world. In some cases, this has a positive impact. These alternative realities have become more complex and more complicated as new technologies and technology providers come onto the market. The learning market is a logical proving ground for many of these technologies and there are instances where these alternative technologies have resulted in learning programs that are perhaps too elaborate, too complicated and too removed for sound transferable learning outcomes. Nevertheless, there is room to proceed with caution, to not over-invest or over-commit.

In essence the alternative realities realm can be seen to comprise the following:

- » **R** = Reality
- » **AR** = Augmented Reality
- » **MR** = Merged reality
- » **VR** = Virtual Reality
- » **XR** = Cross Reality

These realities can be represented in the following diagram:



6. Other challenges that may impact the implementation of the Fellowship's broader recommendations and considerations are:
  - » Pockets of resistance may remain (either within the sector as a whole, within a particular institution or within a department)
  - » Requires cultural change within the vocational sector
  - » Requires behavioural change for practitioners
  - » Infrastructural and IT restraints may limit take up of the Consequential Learning model in particular
  - » Requires IT investment
  - » There are numerous moving parts
  - » Providers of technology platforms may seek to run their own agenda and/or push their own platform
  - » Providers of technology may seek to impose barriers or restrictions that impede the comprehensive take up and implementation

# 5. Personal, Professional and Sectoral Impact

---

## 5.1. Personal and Professional Benefit

The experience of undertaking this Fellowship has had a significant impact on the Fellow. It has enabled the attainment of considerable skills, knowledge and experiences as well as giving the Fellow considerable exposure to many diverse groups of people and cultures. The Fellow has been able to benefit enormously from the knowledge acquired from the considerable volume of research and the extensive number of case studies that have shared their significant findings.

The Fellow has also been able to finetune a significant piece of work aligned to a key passion held for many years: raising the profile of those important skills that are too often over-looked, over-simplified and down-played. The Fellow is grateful and appreciative of being able to position the concept of Prime Skills as a driving force for quality and engaging learning experiences (both in educational settings and organisational learning settings). The Fellow hopes to be able to continue developing and positioning the concept of Prime Skills and seeks an opportunity to actively implement a dedicated approach to maximise their take-up and use.

The Fellow is also encouraged by positive commentary and feedback received relating to the Consequential Learning approach and the results achieved from the major application of this approach. The Fellowship activity has benefitted the Fellow significantly as it has made possible plans to expand the Consequential Learning approach to make it more impactful in delivering tangible and sustainable outcomes as well as measurable impact. The Consequential Learning approach has proven itself to be adaptable in ways that will directly incorporate elements that have come to light as a result of undertaking this Fellowship activity. These will be touched on in the Recommendations and Considerations section that follows.

The Fellow is excited about the possibilities of implementing an enhanced version of Consequential Learning that fully incorporates social and collaborative learning activities, and makes use of appropriate collaborative technologies, to enhance Prime Skills as well as delivering solid outcomes for all learners and the educationalists delivering the program.

## 5.2. Dissemination Activities

Learnings and outcomes from this Fellowship have the potential to be directly applied and implemented through various current initiatives with Holmesglen's clients. Additionally, the Fellow will actively explore how to best utilise these outcomes across the wider Holmesglen Institute and through all faculties.

Accordingly, the Fellow will develop a communication plan to share the outcomes and learnings throughout Holmesglen Institute and with key partners. This communication plan will also include the Fellow's associates and wider professional network. This will be achieved through attendance at meetings and sessions with all Deans and Heads of Department as well as the Executive Group of the Institute.

Articles and social media activity will also be considered, as this will enhance Holmesglen's desire to establish an innovation hub that will drive best practice and quality improvement initiatives throughout the Institute.

In his current role as Head of Professional Workforce Solutions within Holmesglen, the Fellow is often called upon as a thought-leader, and is invited to participate in focus groups and discussions across various faculties and departments. The results of this Fellowship will enable the Fellow to make an even greater contribution

towards the knowledge sharing and creation of best practices within Holmesglen. Several of Holmesglen clients are leading providers of educational programs that emphasise apprenticeships. The findings from this Fellowship will be disseminated directly to these host organisations with the aim of better integrating and on-boarding newly qualified apprentices.

Externally, the Fellow will seek out opportunities to present the findings via the TAFE network and via the wider learning and development community. This will include, where applicable, presentation of papers at conferences and seminars. Specifically, the Fellow will develop a presentation to position and expand on the concept of Prime Skills. The Fellow will also develop a robust case study focusing on the impact of Consequential Learning in the CYP induction program.

The Fellow will actively explore opportunities to present at Australian conferences (both in the VET sector and the organisational L&D sector) and at international conferences (e.g. returning to The Future of Education Conference and also speaking at the Association for Talent Development (ATD) Annual Conference where the Fellow has been an international speaker).

Additionally, the Fellow has established a collaborative partnership with Vlearning, creators of visual and eLearning innovations for communication, education and training. The outcomes of this Fellowship will enhance this collaboration and will ensure programs designed and delivered by the Fellow will utilise innovative learning frameworks.

### 5.3. Impact on VET Sector, Industry and Society

A raised profile of Prime Skills for both educationalists and learners coupled with an appropriate combination of social and collaborative learning practices and tools and technologies, has the potential for far-reaching impact in the provision of learning experiences. The potential impact on the vocational education sector, on wider organisational training activities and society as a whole is highlighted in the following table.

Sector	Role	Potential Impact
VET sector	Educationalists	<ul style="list-style-type: none"> <li>• Become better skilled to be able to provide engaging learning experiences</li> <li>• Achieve greater job satisfaction by being more inspired to be able to provide engaging learning</li> <li>• Establish closer connectivity with both students and industry partners</li> <li>• Be given, and willingly accept, greater accountability regarding better learning outcomes</li> </ul>
	Students	<ul style="list-style-type: none"> <li>• Increased skill set, especially relating to their Prime Skills</li> <li>• More employable</li> <li>• Greater levels of engagement with their career and with their future career prospects</li> <li>• More inspired to maintain a dedicated approach to maximising their full potential</li> </ul>

Sector	Role	Potential Impact
Corporate L&D sector	Practitioners & departments	<ul style="list-style-type: none"> <li>• Become better skilled to be able to provide engaging learning experiences</li> <li>• Achieve greater job satisfaction by being more inspired to be able to provide engaging learning</li> <li>• Establish closer connectivity with both students and industry partners</li> <li>• Be given, and willingly accept, greater accountability regarding better learning outcomes</li> <li>• Have more relevance as a support services department</li> <li>• Have more relevance as a learning professional</li> <li>• Be more aligned with social and educational expectations</li> </ul>
	Organisations	<ul style="list-style-type: none"> <li>• Achieve greater return on investment of learning initiatives</li> <li>• Achieve increased (and possibly, optimal) usage of internal learning resources and assets</li> <li>• Make a greater social impact by learning outcomes that contribute to sustainability, social and community initiatives</li> </ul>
	Employees	<ul style="list-style-type: none"> <li>• Increased skill set, especially relating to their Prime Skills</li> <li>• More employable</li> <li>• Greater levels of engagement with their career and with their future career prospects</li> <li>• More inspired to maintain a dedicated approach to maximising their full potential</li> </ul>

Sector	Role	Potential Impact
Society at large	All	<ul style="list-style-type: none"> <li>• Greater synergy between educational sector, students, industry/employers and employees</li> <li>• Better career navigation both via identified pathways and students willing to navigate those pathways</li> <li>• Increased understanding across all components of the tertiary sector and the needs (short, medium and long) of employers</li> <li>• Highly skilled workforce across all industries and sectors</li> <li>• Greater economic efficiency</li> <li>• Increased policy alignment of educational initiatives</li> <li>• Greater and more productive resource utilisation</li> <li>• Contributing towards becoming an education state</li> </ul>

Table 6: Impact On All Sectors

## 6. Recommendations and Considerations

---

1. Promote the **new model of Prime Skills** as outlined in this report (Note as further development of this model would be beneficial an additional, and preliminary consideration, is to seek sponsorship and support to undertake this activity).
2. Ensure these Prime Skills are as much **the focus of how learning takes place as it is what learning takes place**. Prime Skills should be integral to the way things are done and be seamlessly incorporated into all aspects of the learning institution.
3. Ensure these Prime Skills are explicit and implicit in the **learning curricula as well as the learning framework** used within learning institutions. They should be “front and centre” and widely promoted in all external marketing materials.
4. **Create a process** that can be easily implemented to enable **micro-credentialing** for educationalists and practitioners in these Prime Skills.
5. **Enable educationalists to attain** (or at least aim for) achieving micro-credentials in these Prime Skills. Develop a system to make micro-credentialing attainable and accessible. Ensure this system is given the prominence and recognition that it needs so that educationalists are compelled to seek and maintain their credentials, especially in Prime Skills.
6. **Embed the concepts of social learning and collaborative learning** across organisations to empower learners to willingly embrace them. Note - this is not just the tools, technology and platforms associated with social learning and collaborative learning, but also the mindset and attitudes to embrace social learning and collaborative learning in all respects. (Organisations include: corporates and businesses; government agencies, primary, secondary, vocational and tertiary education providers).
7. Promote the value of **authentic assessments** in learning institutions. Ensure that educationalists know the power and potential of authentic assessments and are able to design robust assessment activities that focus on what learners need to do (not what they need to know). Ensure these authentic assessments encompass all skills being taught in a learning program with particular emphasis on Prime Skills.

8. Encourage the use of an enhanced version of **Consequential Learning** (Consequential Learning 2.0) that incorporates the following elements of:
  - a. Flipped Classroom (that in turn prepositions and optimises social learning activities)
  - b. Prime Skills
  - c. Micro-credentials for educationalists and practitioners
  - d. Collaborative learning activities and practices for learners
  - e. Authentic assessments for learners, with an emphasis on Prime Skills
  - f. Micro-credentials for learners, with an emphasis on Prime Skills
  - g. Appropriate use of social learning and collaborative learning tools and technologies

This Version 2.0 of Consequential Learning is encapsulated in the following visual.

### Consequential Learning 2.0

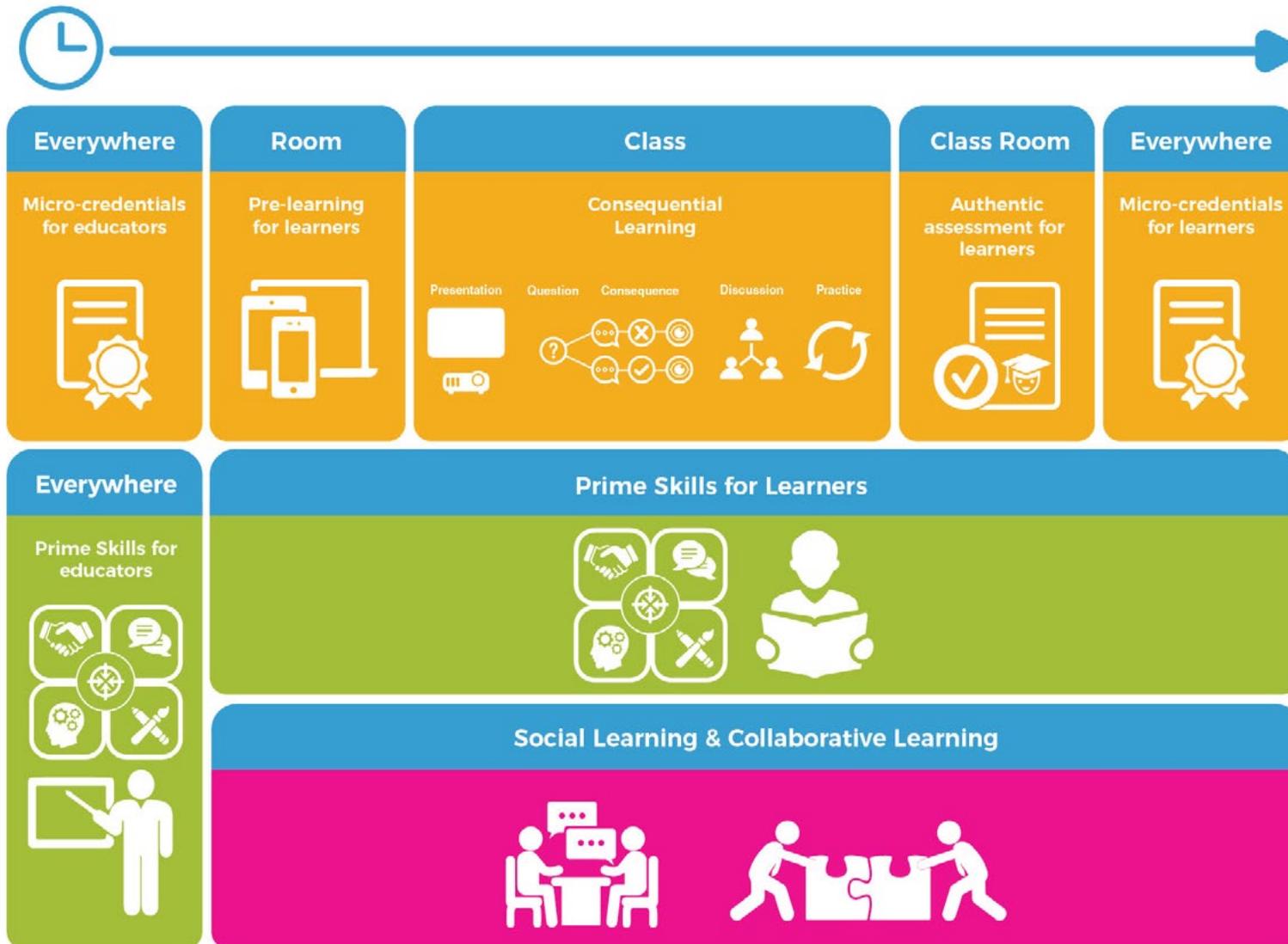


Figure 17: Consequential Learning Version 2.0 (© Simon Bruce 2019)

9. Make stronger **linkages between humanities** and other disciplines in formal educational settings, as well as in corporate education settings. This will allow the Prime Skills to become more prevalent and prominent in the learning activities. The importance of humanities is articulated exceptionally well in the Deloitte, Access Economics Report, The Value of Humanities, which stated that humanities are important to:
1. *“employers, through having a more productive, innovative and multidisciplinary workforce;*
  2. *the broader community, through better informed citizens and a better understanding of our place in the world;*
  3. *graduates, through increasing their lifetime earnings by increasing wages and job prospects; and*
  4. *our society, through the contributions of Humanities research to improved social outcomes.”<sup>4</sup>*

The report also states:

*‘Some of the big public policy challenges facing Australia—‘wicked’ problems such as climate change, obesity, and indigenous disadvantage—require innovative solutions. These solutions are likely to be developed by multidisciplinary teams that understand human behaviour and can connect with people. Humanities graduates play important roles in these teams.’<sup>5</sup>*

These interdisciplinary teams will be engaging prominently in social and collaborative learning activities, making use of social and collaborative tools

and technologies and, therefore, will need to have highly developed Prime Skills.

10. Be **mindful of the full impact of cross reality** (XR) in totality (not just AR or VR in isolation). Furthermore, don't lose sight of the importance of reality (R) and ensuring that learning experiences, whilst possibly utilising AR or VR, remain firmly grounded in R. This takes on increased importance and greater relevance as R is the foundation of Prime Skills and these, in turn, help embed and reinforce R.
11. Everyone is looking towards Artificial Intelligence (AI) as the next big innovation in learning. But **AI is actually watching us** and arguably, AI does not have emotions (although some advocates say it does) and therefore does not have the capacity for Prime Skills.
12. **Data relating to (and/or generated by) learners could potentially become a rich pool of currency.** Additionally, the educational system is becoming increasingly monetised and corporates are increasing their expectations on the ROI of their learning programs (their learning programs are becoming earning programs). As a result, and as with all forms of currency, this data pool could lead to a demand for exchange and trade between organisations, institutions and policy makers. We need to tread carefully into this space, not only for privacy reasons but also to prevent the monopolisation of data which could lead to misuse and/or abuse and the subsequent channelling or misdirection of funds, resources and efforts under the guise of providing a new learning application, platform or tool. The unauthorised access to this learning data is also of major concern.<sup>6</sup> Additionally, any data produced by fake news becomes fake data, which can only be considered as counterfeit

<sup>4</sup> Deloitte, Access Economics Report, The Value of Humanities, July 2018, page 5

<sup>5</sup> Ibid, page 10

<sup>6</sup> When it comes to the hacking of data, it is often said that there is only two types of organisations: those that have been hacked and they know it, and those that have been hacked and they don't (yet) know it! We shouldn't remain complacent regarding data relating to learners and/or the outcomes of learning programs and the potential for that data to be misused by hackers.

13. currency. Therefore, our need to show caution surrounding learners' data is heightened, especially as the learning profession enters into the realms of big data and increases its use of analytics, metrics, dashboards and data visualisation.
14. **The Flipped Classroom model** continues to gain traction in educational settings. We need to be cautious of over-using this model or misusing it. Nevertheless, it can be highly effective when well structured, well positioned, well resourced and appropriately administered. Given that the use of flipped classrooms can enhance and embed the Prime Skills, the flipped classroom should be expanded whenever possible. And this could be taken to the next level where the Prime Skills are more explicit in both how and why they are evident in the flipped classroom activity (either in the “class” or in the “room”);
15. **Learning ecosystems**, where learning institutions form close partnerships with industry need to become more prominent. They could work best if they were targeted to specific industries, as with the Victorian Tunnelling Centre.

# 7. References

---

## Skills

World Economic Forum – Future of Jobs Report 2016

[http://reports.weforum.org/future-of-jobs-2016/?doing\\_wp\\_cron=1552188558.4994409084320068359375](http://reports.weforum.org/future-of-jobs-2016/?doing_wp_cron=1552188558.4994409084320068359375)

World Economic Forum – Future of Jobs Report 2018

<https://www.weforum.org/reports/the-future-of-jobs-report-2018>

Deloitte Access Economics and DeakinCo - Soft Skills for Business Success, May 2017

<https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-deakin-soft-skills-business-success-170517.pdf>

LinkedIn - Key Soft Skills Needed For career, 2018 & 2016

<https://learning.linkedin.com/blog/top-skills/the-skills-companies-need-most-in-2018--and-the-courses-to-get-t>

<https://www.linkedin.com/pulse/soft-skills-increasingly-crucial-getting-your-dream-guy-berger-ph-d-/?published+t>

Hart Research Associates, Employer-rated Learning Outcomes - Falling Short?

College Learning and Career Success Selected Findings from Online Surveys of Employers and College Students Conducted on Behalf of the Association of American Colleges & Universities, 2015

<https://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf>

Kineo City & Guilds - Bridging the Skills Gap, 2015 - Whitepaper

NCVER, National Centre for Vocational Education Research - Skilling for Tomorrow, Anna Payton, Discussion paper, June 2017

<https://www.ncver.edu.au/research-and-statistics/publications/all-publications/skilling-for-tomorrow>

Business Council of Australia – Being Work Ready, A Guide to What Employers Want, 2016

[https://dlb.sa.edu.au/lworkmoodle/pluginfile.php/636/mod\\_resource/content/1/Being%20Work%20Ready%20Guide.pdf](https://dlb.sa.edu.au/lworkmoodle/pluginfile.php/636/mod_resource/content/1/Being%20Work%20Ready%20Guide.pdf)

McKinsey & Company, McKinsey Global Institute – What the Future of Work Will Mean For Jobs, Skills and Wages, 2017

<https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>

EAB Global - The one skill employers want most from new grads, 2017

<https://www.eab.com/daily-briefing/2017/06/21/the-one-skill-employers-want-most-from-new-grads>

International Journal of Higher Education, Unpacking the Information, Media, and technology Skills Domain of the New learning Paradigm, Dr Charles Kivunja, 2015

<http://www.sciedu.ca/journal/index.php/ijhe/article/view/6342>

Institute for the Future, University of Phoenix Research Institute – Future Work Skills 2020

<http://www.iff.org/futureworkskills/>

STEM and 4Cs - Google finds STEM skills aren't the most important skills

<http://michiganfuture.org/01/2018/google-finds-stem-skills-arent-the-most-important-skills/?fbclid=IwAR2gxfsHHygH3JkBY-WjPtAH9sucwQaThohgF9U6UPADC6XDr2g50cZSh-w>

Soft skills in leadership & project management

<https://www.mckinsey.com/business-functions/organization/our-insights/the-organization-blog/from-pyramids-to-pipelines-the-importance-of-soft-leadership-skills?cid=other-eml-alt-mip-mck-oth-1807&hlkid=bd98299deac643ebafd4e595d7b9e782&hctky=2693470&hdpid=0843a0ae-8a6f-4285-9e91-a0f54dbad541>

## Social Learning and Collaborative Learning

Kineo, City & Guilds – Social Learning: How it Works in the Workplace, 2017

<https://www.kineo.com/insights/social-learning-how-it-works-in-the-workplace>

Shiftelearning.com/Blog – The Whys and Hows of Social Learning in the Workplace, 2016

<https://www.shiftelearning.com/blog/the-whys-and-hows-of-social-learning-in-the-workplace>

Kineo, City & Guilds – Power to the Learner, 2018

<https://www.kineo.com/insights/power-to-the-learner>

Kineo, City & Guilds – Be a “Social Enabler” Not “Social Controller”, 2017

<https://www.kineo.com/insights/be-a-social-enabler-not-social-controller>

McKinsey & Company, McKinsey Global Institute – Advanced Social Technologies and the Future of Collaboration, 2017

<https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/advanced-social-technologies-and-the-future-of-collaboration>

McKinsey & Company, McKinsey Quarterly – The Evolution of Social Technologies, 2016

<https://www.mckinsey.com/industries/high-tech/our-insights/the-evolution-of-social-technologies>

McKinsey & Company, McKinsey Global Institute – How Social Tools Can Reshape the Organisation, 2016

<https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/how-social-tools-can-reshape-the-organization>

Mindtools.com - How to Collaborate Successfully: Sharing Knowledge and Expertise to Drive Innovation

<https://www.mindtools.com/pages/article/collaborate-successfully.htm>

Networked Learning: Reflections on Knowledge Networking – What is Connectivism?, 2017

<http://thinkspace.csu.edu.au/networkedlearning/2017/10/04/what-is-connectivism/>

INSEAD Knowledge - The Digital Transformation of Museums, 2017

<https://knowledge.insead.edu/blog/insead-blog/the-digital-transformation-of-museums-6851>

ASPEN Institute - The Evidence Base for How We Learn: Supporting Students' Social, Emotional, and Academic Development, 2017

<https://www.aspeninstitute.org/publications/evidence-base-learn/>

International Education Advisory Board – Learning in the 21st Century: Teaching Today's Students on Their Terms, 2016

[https://www.certiport.com/portal/common/documentlibrary/ieab\\_whitepaper040808.pdf](https://www.certiport.com/portal/common/documentlibrary/ieab_whitepaper040808.pdf)

Social Capital Research – Social Capital, the Creation of Knowledge and Knowing Capacity and Innovation, 2014

<https://www.socialcapitalresearch.com/one-hundred-years-social-capital/social-capital-creation-knowledge-knowing-capacity-innovation/>

eLearningindustry.com – Top 4 Reasons Your Workplace Needs Social and Collaborative Learning Technologies, 2016

<https://elearningindustry.com/top-4-reasons-workplace-needs-social-learning-and-collaborative-learning-technologies>

## Case Studies from Future of Education Conference

Conference Proceedings for the International Conference, The Future of Education, 8th Edition, Florence, Italy, 28-29 June 2018, published by Libreria Universitaria, 2018

## The importance of humanities

<http://4humanities.org/wp-content/uploads/2013/07/humanitiesmatter300.pdf>

<https://theconversation.com/how-the-humanities-can-equip-students-for-the-fourth-industrial-revolution-103925>

<https://theconversation.com/creativity-can-be-the-bridge-between-science-and-humanities-education-99610>

<https://www.theage.com.au/business/the-economy/what-s-an-arts-degree-really-worth-200-000-just-for-starters-20181107-p50ej7.html>

[www.deloitte.com/au/deloitte-access-economics/deloitte-au-economics-value-humanities-111018%20\(1\).pdf](http://www.deloitte.com/au/deloitte-access-economics/deloitte-au-economics-value-humanities-111018%20(1).pdf)

## Site Visits to see how Social Learning and Collaborative Learning are enhancing Prime Skills

McKinsey Whitepaper, The art of project leadership: Delivering the world's largest projects, McKinsey Capital Projects & Infrastructure Practice, September 2017, <https://www.mckinsey.com/~media/mckinsey/industries/capital%20projects%20and%20infrastructure/our%20insights/the%20art%20of%20project%20leadership%20delivering%20the%20worlds%20largest%20projects/the-art-of-project-leadership.ashx>

## Micro-credentials

Demystifying Credentials: Growing capabilities for the future,

[https://www.deakinco.com/uploads/dc\\_whitepaper\\_demystifying\\_credentials\\_v01\\_FA%20\(3\).pdf](https://www.deakinco.com/uploads/dc_whitepaper_demystifying_credentials_v01_FA%20(3).pdf)

Board of Regents of the University of Wisconsin System - A New Model of Meaningful Credentials: The University Learning Store, 2015, pdf,

Draft ULS Curricular Map & Supporting Research (Dec 2016).pdf

Digital Promise - Developing a System of Micro-credentials: Supporting Deeper Learning in the Classroom, 2016, pdf

<https://digitalpromise.org/2015/02/11/supporting-deeper-learning-in-the-classroom/>

## Additional References

McKinsey & Company, McKinsey Quarterly – Where is Technology Taking The Economy?, 2017

<https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/where-is-technology-taking-the-economy>

World Skills Foundation – What Contributes to Vocational Excellence? Characteristics and experiences of Competitors and Experts in WorldSkills London 2011

[https://www.worldskills.org/files/legacy\\_wsf/downloads/WSF\\_MoVE\\_Global\\_report\\_WSC2011.pdf](https://www.worldskills.org/files/legacy_wsf/downloads/WSF_MoVE_Global_report_WSC2011.pdf)

Harvard Business School - Why Employers Must Stop Requiring College Degrees For Middle-Skill Jobs, 2017

<https://hbswk.hbs.edu/item/why-employers-must-stop-requiring-college-degrees-for-middle-skill-jobs>

Allegis Group, Infographic – AI Will Drive Demand for New Skills

[www.Allegisgroup.com/AI](http://www.Allegisgroup.com/AI)

PricewaterhouseCoopers – Workforce of the Future: The Competing Forces Shaping 2030, 2017

<https://www.pwc.com/gx/en/services/people-organisation/publications/workforce-of-the-future.html>

Full Circle Associates – Facilitating Online Interaction: An Introduction, Nancy White, 2008

Deloitte University Press – Rewriting the Rules For the Digital Age, 2017

<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-cons-hc-trends-industry-summary-tmt-spread.pdf>

ASAE Foundation Foresightworks – New Forms of Work, 2018

# 8. Appendices

## 8.1. List of social and collaborative learning tools

Jane Hart, Founder of the Centre for Learning & Performance Technologies (C4LPT), regularly compiles a useful guide that depicts all the tools and technologies that enhance social and collaborative learning. This 2019 list has recently been published and appears in the following image.

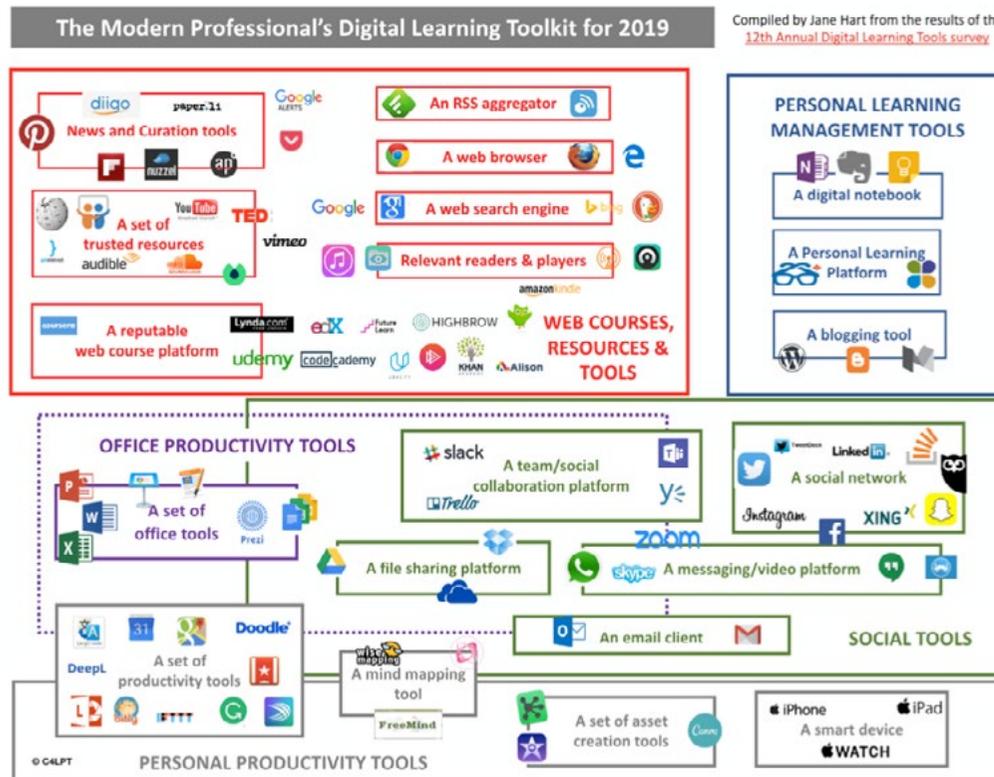


Figure 18: Tools and Technologies That Enhance Social and Collaborative Learning (© Jane Hart 2019)



**ISS Institute**  
Level 1, 189 Faraday Street  
Carlton VIC 3053

**T** 03 9347 4583  
**E** [info@issinstitute.org.au](mailto:info@issinstitute.org.au)  
**W** [www.issinstitute.org.au](http://www.issinstitute.org.au)

---

Published by International Specialised Skills Institute, Melbourne | [www.issinstitute.org.au](http://www.issinstitute.org.au)

© Copyright ISS Institute May 2019

This publication is copyright. No part may be reproduced by any process except in accordance with the provisions of the Copyright Act 1968.

Whilst this report has been accepted by ISS Institute, ISS Institute cannot provide expert peer review of the report, and except as may be required by law no responsibility can be accepted by ISS Institute for the content of the report or any links therein, or omissions, typographical, print or photographic errors, or inaccuracies that may occur after publication or otherwise. ISS Institute do not accept responsibility for the consequences of any action taken or omitted to be taken by any person as a consequence of anything contained in, or omitted from, this report.