



International
Specialised
Skills
Institute

21ST CENTURY EMPLOYMENT

Skill Education and Training

An International Specialised Skills Institute Fellowship.

LOUISE ROBINSON

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Department of
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i. Executive Summary

Louise Robinson, the recipient of this Fellowship, developed the idea for this project from her experience as Executive Director of Vocational Education at RMIT University, and during her activities establishing, operating and overseeing the Vocational Skills and Jobs Centre (SJC) at RMIT University.

Ms Robinson's Fellowship identified models and practices designed to significantly extend and enhance the reach, range and impact of employment skill training and education to those likely to or who are currently experiencing disadvantage in access to education and employment. The changing nature of work in the 21st Century means that increasing people face this experience.

The Fellowship research was undertaken in 2017, and involved a study tour to Barcelona to identify agencies, individuals and sites to learn from the key people and stake-holders who participated in or are still involved in the innovative and successful social and community engagement and enrichment skills education programs offered in that city, a global leader in such programs.

Ms Robinson's Fellowship investigated, and reports herein on, solutions to a complex issue faced by Government and Educators in Victoria: how best to provide relevant and cost effective re-training for those in trades, occupations and professions that are declining in, or have lost, relevance; while also ensuring mainstream education has adapted to and is delivering skilled graduates ready, competent and capable to participate in the new forms of work and career paths rapidly emerging in the 21st Century.

1. Fellowship Background

1.1 The Fellow: Louise Robinson

Louise Robinson, the recipient of this Fellowship, developed the idea for this project from her experience in establishing, operating and overseeing the Vocational Skills and Jobs Centre (SJC) at RMIT University. As well, Ms Robinson is Executive Director of Vocational Education at RMIT University, Melbourne, Victoria, Australia. She is a key leader in the executive strategic team at RMIT University and in this role, oversees and advises on developments in the local, national and international vocational education and training sectors.

RMIT University, primarily based in the Melbourne inner city but with branches through the greater Melbourne area, campuses and joint education in South East Asia and a hub in Europe, is a dual-sector education institution, operating extensive vocational education and training, Higher Education programs and research, and is recognised for its development of educational pathways. These pathways provide opportunities for students to gain skills to enter employment or to transfer from one RMIT program to another, and from vocational education and training to Higher Education, opening the doorway to many trades, occupations and professions. Additionally, as an option to be skilled for self-employment, RMIT's entrepreneurship and small business skills education programs assist people to develop ideas for small business as well as to apply for seed funding to start up their own enterprise.

In 2016, with the support of the Victorian Government, Ms Robinson established the RMIT Vocational Skills and Jobs Centre (SJC); its purpose is to focus exclusively on outreach and engagement with disadvantaged cohorts. The SJC works with a range of local partnerships and networks to provide a range of services to

disadvantaged job seekers. It also provides assistance for people to develop employability skills in partnership with schools, business and non-government organisations.

1.2 Fellowship issue background

This Fellowship investigated solutions to a complex issue faced by Government and Educators in Victoria: how best to provide relevant and cost effective re-training for those in trades, occupations and professions that are declining in, or have lost, relevance; while also ensuring mainstream education has adapted to and is delivering skilled graduates ready, competent and capable to participate in the new forms of work and career paths rapidly emerging in the 21st Century.

Current High School Leavers, as well as existing members of the workforce, face a swiftly changing and increasingly complex work environment. Being employed in the 21st Century involves accepting multi-diverse career options. Few people will stay in the same discipline or specific profession for their entire life. Inside many professions or career disciplines, the knowledge and skill requirements will change rapidly and constantly. The main factors that are driving such widespread, often disruptive change to established employment patterns are the Internet, eCommerce, 3D printing, globalisation, economic nationalism, consumer demand changes, Robotics and Automation, and off-shoring. The process of change involving degrees of economic, social and political disruptions resulting from these factors have led to significant change in, decline in demand for, even the cessation of, some trades, crafts, occupations and professions. For example: 1-hour picture developers have practically vanished; cameras have largely been replaced by the picture-taking capacity of mobile phones; paper-based street directories are rarely

seen; newspaper employment has shrunk greatly; the taxi industry faces great disruption.

At the same time, the ongoing impact of these factors has meant the development of new forms of work, employment and careers. For example, 15 years ago, very few people, if anybody, would have been working as a Search Engine Optimiser specialist ensuring a company's website received the best Google ratings possible. There was no economic pressure for such work to be done, or for such a worker to be hired, or for any institution to offer education in and for such work skills and practices. And this highlights a major issue. The ongoing disruption to 21st Century employment patterns means that educators - schools, vocational education and training providers as well as universities - need to be diligently tracking such trends and vigorously adapting their educational offerings and practices. Otherwise, educators fail in their remit of ensuring students are ready for work, providing students with an understanding of what they will face in employment, demonstrate a productive grasp of career options open to them, and obtaining the fundamental skills and capabilities to successfully participate in the 21st Century workforce.

It is becoming increasingly clear that the whole concept of a 'career' is breaking down. Now, and this will only escalate, it is unlikely that people will follow one career, stay with one employer, continue working in one industry, have unbroken full-time employment, or even remain in a single country for the extent of their working life. This impact affects trades and professions, manufacturing and services industries, rural and urban sectors — the entire economy faces or is already in disruption.

Currently, new trade, occupational and professional roles are emerging and existing workforce roles are going through substantial to radical redefinitions of what skills, training and education are, and will be, required for 21st Century employment.

Disruption means that individuals will need to continually adjust to, be educated for, be trained in, and gain experience relevant to the emerging new forms of

employment. A person, a region or a country that does not recognise this process and adapt to it will be left behind.

21st Century multi-careers will involve a person developing, and then possibly leaving behind, several employment skill-sets and shifting between a number of industries, sometimes significantly different industries.

This disruption has resulted in changing work roles and practices as well as the need to recognise new career paths and patterns of employment. Career paths are no longer linear, in that continued full time employment founded from entry level to retirement is no longer guaranteed nor consistent, with lifelong careers founded on one set of acquired technical skills are diminishing. Increasingly, individuals will face moving through a number of careers, and building new occupational and professional skill sets and experience.

Globally, in developed economies, significant change and even disruption, is occurring in the employment practices of and customer demand for many trades, skilled occupations and professions. As well, advancements in automation, robotics, digital technology and eCommerce, among other factors, is radically altering and decreasing both the sheer volume and the type of work available for the unskilled. Employment for the truly unskilled, meaning paid work that requires absolutely no proof of any prior training, is becoming rarer. Even menial and very low-level types of work can nowadays require some form of certificate or evidence of competency. There is an ongoing decline in the work available for those who only hold secondary school education qualifications. Not having taken part in any form of workplace readiness preparation will most likely mean a bleak employment future for any school leaver.

In those industries that still have a need for unskilled employees, changing cost regimes have meant that much of that unskilled work has been shifted; where possible, to other locations / countries that pay much lower wages. The process of off-shoring unskilled work activities to low-cost regimes has been accompanied, over the last few decades, by a re-location of factory, manufacturing and

processing facilities. Parts of some towns, regions, even states, that relied on such commercial and business activity which has now declined or even ceased, face significant social, political and economic issues as a result of all this change. Many workers and businesses impacted directly, or indirectly, by this disruptive change face a stark reality - change career path / trade / craft / occupation / profession, develop completely new work skills, move to new locations because the economic, business and commercial activity you were trained for, involved in, and employed by will soon finish or has, indeed, finished.

On the positive side, demand is increasing substantially for new skills that are integral to the forms of work that are emerging in the 21st Century.

The Fellow saw this issue first-hand through RMIT Vocational Skills and Jobs Centre (SJC) experience. This led her to seek a Fellowship through ISS Institute to understand how to more effectively engage disadvantaged cohorts in order to provide an end-to-end personalised skill education experience and at the same time, meet the needs of employers or communities. This led the Fellow to successfully apply for this Fellowship to seek solutions which could be considered in the Victorian context in order to assist:

- » the prospective job seeker to be able to identify their interests and skill levels in order to understand employment or education opportunities or channels;
- » the prospective job seeker understand the pathways into preferred areas of engagement or employment;
- » the employer so that needs are clearly defined and addressed; and,
- » local communities engaged to provide support to employers, job seekers or those who wish to engage on a social enterprise basis.

In developing these solutions, the Fellowship involved an extensive study tour of Barcelona, where this issue has impacted seriously. The solution in Barcelona, on the big picture scale, involved implementing a number of innovative and successful measures, based upon a high degree of cooperation, coordination and consensus between government, industry, union, community and education stake-holders.

This Fellowship sought to learn from the Barcelona, and general European, experience of this issue to assist in outlining the implementation and sustainability of such measures in Victoria. In addition, another goal was to identify potential partners who could assist in the planning framework and, even, the actual implementation of such measures. This could be the first step in a global network of cities and regional governments providing each other with ideas about and resources for addressing the reduction of disadvantage in access to employment opportunities.

1.3 Ensuring equitable employment opportunity in Victoria

The Victorian Government, through its 'Skills First' initiative, has sought to ensure that the TAFE system provides sustainable, cost-efficient, effective and relevant education and training, especially to those groups suffering disadvantage or with limited access to education and employment opportunities. A major element of Skills First is that educators, industry and employers operate in a cooperative and coordinated manner so that a multiplicity of pathways exist for people through education into employment. These pathways have numerous entry and exit points, and involve best practice preparation for the 21st Century workplace. This 'best practice' would involve an emphasis on innovative practice and be productively focused on continual upgrading and adaptation of the linkage and engagement between the key stake-holders in the education sector, industry, community and government.

This Fellowship provided an opportunity to learn from those who have already developed practices which address the development and delivery of tailored educational services. Ones that offer pathways into education and enterprise formulation, and also involve deeper engagement between government, industry, union, community and education stakeholders in the planning and offering of employment skill training.

2. Fellowship Methodology

This Fellowship identified models and practices designed to significantly extend and enhance the reach, range and impact of employment skill training and education to those likely to or who are currently experiencing disadvantage in access to education and employment. The changing nature of work in the 21st Century, as outlined previously, means that increasingly people face this experience.

The Fellowship investigation research and findings development were undertaken throughout 2017. This involved the identification of agencies, individuals and sites in Barcelona engaged in best practice solutions for addressing skills education and employment opportunity disadvantage. The Fellow visited Barcelona in January 2017 and conducted a series of face-to-face interviews and on-site visits to learn from the key people and stakeholders who participated in or are still involved in the innovative and successful social and community engagement and enrichment skills education programs offered in Barcelona.

These activities were supported by additional desk-based research into the future of work. This was done to provide a theoretical framework to assist in developing 'best practices' solutions suitable for Victoria.

Dissemination activities commenced in 2017, with preliminary findings discussed in several informal seminars. Formal, and further, dissemination will continue in 2018.

3. Fellowship Learnings

The Department of Education and Training Higher Skills Group seeks to reduce impact of disadvantaged persons in Victoria and seeks to identify and learn from innovative approaches that will engage people into pathways, whether education, enterprise development or employment.

Victorian public providers are committed to assist the Victorian Government, particularly to engage disadvantaged cohorts using their resources and facilities as an enabler. An outcome of the Fellowship is to review how a centrally based education provider can engage with disadvantaged cohorts: through the physical and digital environments.

Similar challenges have been faced in the City of Barcelona. Learning from the European context, Spain was selected by the Fellow as an example of experiencing high levels of unemployment and in particular high youth unemployment in order to learn about approaches to support these cohorts and the impact to society. Spain has the second highest unemployment rate in the EU after Greece with the rate reaching an all-time high of 26.94 percent in the first quarter of 2013.¹ Of interest is that the Youth Unemployment Rate in Spain was 43.20 percent in July 2016. This rate was down from of 56.20 percent in February of 2013 and the Fellow sought to understand how this was achieved.

To address these major social, economic and political issues a number of initiatives from government, community, council, industry and educators were identified as a case study for this Fellowship. Barcelona offers an innovative approach to consider a range of urban, economic and social

transformation and from which innovative ideas for engaging disadvantaged cohorts might emerge. Of interest, the 22@Barcelona innovation district and other community, government, educational institutions and industry and social stakeholders have worked together to create vibrant, creative and economically-productive urban communities.

Several major points arise from Ms Robinson's Fellowship study of 'best practice' education and training for employment skills suitable to 21st Century multi-careers during her site visits and interviews with employers, education providers, communities, students, unions, government, city council, not-for-profit skills providers, local communities as well as infrastructure consultants.

1. Recognising and preparing for nonlinear careers

The future of full-time, continuous work within one economic sector or by only using one skillset learned in one's teens is declining. This will have an impact on how people prepare for and obtain the skills required for employment. The ongoing emergence of a widespread freelance approach to lifetime work means that individuals might, and probably will, be employed in a variety of contracts or roles at times. This will see employees requiring differing capacities, work in jobs that vary in duration, and be in numerous locations and industry sectors.

2. Education for lifelong learning skills need to address non-linear career paths and be pro-active in adapting to new work practices

Ongoing skills education for people, regardless of qualification level, years of

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<http://www.tradingeconomics.com/spain/unemployment-rate>

experience in the workforce or technical skills are required to ensure currency and skills relevance. Recognition that lifelong learning and continuous education is required across sectors in addition to the traditional skills acquisition experience gained post-secondary school.

3. Negotiating lifelong employment opportunities across multiple employers and sectors

Additionally skills are required to support the diminishing amount of ongoing full-time employment (e.g. consultancy type approach to managing short term contracts across a working life). This could involve learning how to be a subcontractor or consultant/contractor and manage requirements and employment across multiple employers sequentially as well as concurrently.

4. Educating for employment skills training

Education institutions will continue to provide training for the technical skills required for employment. However, there is likely to be an increasing demand for 'ancillary soft skills' that, nevertheless, could prove to be essential (e.g. facilitating the development of resilience in people so that they successfully manage 21st Century employment changes).

5. Adapting to changing industry needs

There is a need for individuals to have an informed understanding of employment opportunities and trends that can be aligned with their personalised skills and interests which meet current and future industry needs. Adapting to changing industry employment needs means there is a requirement to access advice to identify and plan options which might include further skills training across a lifetime of work. Ongoing review of career and employability means the development of skills to navigate pathways into employment or training.

6. Increased employment-focused digital skill levels

Digital disruption offers opportunities for employment in new roles as well as an increased level of digital skills for existing workers. Coupled with the impact of the global marketplace, brought about by technological reach, there are opportunities for people to engage globally through enhanced digital skills. These skills can be at the entrepreneurial level or at an enterprise level.

7. Investment in general digital literacy

As part of the ongoing up-skilling of the workforce there is a need to invest in ongoing digital literacy to support continuous digital development. Current employees need to learn new technical skills as their roles are redefined in response to the incorporation of new technologies.

8. Broadening participation in STEM and other technical disciplines

Longer term there is a need for primary and secondary students (particularly females) to access ongoing employment opportunities in new and emerging industries and redefined roles. Improved and enhanced STEM skills could be a foundation for these skills.

9. Global in business vision

Encouraging students to gain a global outlook during employment skills training and embedding in them an understanding of the global nature and capacity of business and commerce, will increase access to employment options.

10. Entrepreneurship

An orientation into the knowledge and techniques of entrepreneurship and innovation will assist students to develop the skills that could broaden their employment opportunities. These skills also assist workers in traditional roles to adapt to new circumstances.

11. Enhancing access to skills training

The emerging freelance nature of 21st Century employment patterns will have an impact on employment education practices. It is probable that access to skills development opportunities will be required in regular and ongoing 'short bursts', rather than the current notion of full-time or part-time study for several semesters or years. This would facilitate intensive skills enhancement or new development that could take place between works contracts. This would allow people to frequently and productively position themselves for employment.

12. Navigating complicated education and training opportunities

Clarity of information and ease of access to participation will be essential. People will need to be able to swiftly and effectively find the training they need and, then, participate in that skills development opportunity. The core resolve of the education and training sectors should be that they provide a service that allows and assists in the delivery of improved and targeted choice; tailored to each individual's specific career and employment needs. This will require constant communications and dialogue with all stakeholders, and reflective, adaptive institutional practice and process to ensure education and training offerings are relevant, appropriate, engaging and valued. Public and private education institutions need to ensure that this happens across all forms of their offerings. And this needs to have a form of external and objective oversight to ensure that it occurs.

4. Personal, Professional and Sectoral Impact

4.1 Personal Impact

The experiences gained through this Fellowship provided a richness to Ms Robinson's professional development, personal interests and networks. It also provided scope for me to apply the knowledge professionally. The Fellowship has further enhanced my position as an expert advisor at RMIT through the provision of strategic expertise regarding the VET sector and disadvantaged students to the Vice Chancellor, other RMIT Executives as well as into Government and other education institutions. Additionally, I have been able to discuss various findings throughout the skills sector which is timely given current industry skill needs and challenges and opportunities within the Australian sector. In my dealings with various international educational delegations (China, Nepal, Indonesia and other South East and Central Asian groups, as well as United States) I have had the opportunity to share these insights and posit considerations for their future planning of aligning skills capability with employment needs.

My recent promotion to Executive Director of Vocational Education at RMIT gives me a platform from which to identify and implement various findings. Currently I am undertaking a strategic review of external markets (local, national and global) and skills needs, RMIT's capability and capacity to identify segments and deliver skills training and employment services accordingly. The qualitative considerations about the capability and capacity of RMIT relating to structure, process skills and workforce development to engage, support and provide education and other services to priority cohorts have emerged and insights are being reviewed.

Being the Founder of the RMIT 'Skills & Jobs Centre' enables me to further enhance the offerings and provide sustainable funding base to continue these essential services, in a safe, inclusive environment and share my insights across the sector.

4.2 Professional and Sectoral Impact

The ideas stemming from this Fellowship could be adapted to form prototypes and tested on cohorts serviced by RMIT and the results could then be shared across public TAFE providers and relevant government agency sector for consideration and implementation.

Specifically, the following outputs are being modeled and can be replicated across public providers in Victoria:

- A. review of existing services and teaching methodologies which could support identified government priority cohorts
- B. devise models for the provision of education and support services tailored to the needs of the individuals and employers for use by others in the sector
- C. improved engagement methods with disadvantaged Victorians to assist them to enter education, employment or communities to support them
- D. understanding the nexus of urban, social and economic to devise appropriate structures (physical and digital) to support disadvantaged cohorts

- E. development of materials, interactions and sustainable channels to engage individuals to pursue skills training or employment options
- F. development of processes and systems for career planning for workforce transitions
- G. formalise institutional engagement between various community members to improve services to identified cohorts
- H. examination of physical and digital requirements to enhance engagement and entry into jobs related education.

For the broader employment, skills, education and training sector, the following recommendations are made:

1. Supported pathways and career advice through access to specialist and independent advisors to map employment pathways to industry needs as well as to training and skills required. These advisors could independently assist to navigate the complex training market and offer impartial advice.
2. Support could extend to assistance with preparation of applications to attend a training provider, advice on enrolment and the explanation of any requirements (e.g. language, literacy and numeracy tests), pre-training reviews, and VET Student Loans eligibility or other financial and welfare support available.
3. Development of individualised mapped employment or training pathways which are aligned to industry skills needs
4. Access to consistent advisors and ongoing case management support during the periods of an individual's new employment or training; offered through a blend of personalised face-to-face and digital support and over a defined period.
5. Provision of individualised learn or work preparation, such as: skills development to support individuals to 'learn' to training; engagement and life skills (to liaise with community, industry and potential employers); emotional intelligence (EQ) and employment skills (employability, job search, interview technique and transitioning to work). This approach could also involve 'taster programs' before entering employment or the delivery of blended training.
6. Provision of financial support and scholarships for disadvantaged cohorts who qualify for further training or in support of employment search.
7. Proactive identification of those at risk through an alignment of specific government assistance to provide seamless end-to-end support tailored for different cohort segments (e.g. retrenched workers, return to work single parents, youth, or long-term unemployed).
8. Investment at the secondary school level to assist in: building career advice and practice; understanding employment and career profiles; providing pathways into employment and education; and, the development of soft skills required by employers (e.g. teamwork, communication, problem solving, resilience).

5. Summary and Recommendations

Currently, most economies have cohorts that have disengaged from employment, have difficulty accessing suitable employment, are substantially under-employed, or face loss of employment due to disruption and/or economic change. Despite the rhetoric of futurists, these cohorts almost certainly will not be organically integrated voluntarily and will struggle to adapt to the new digital century employment modes.

Employment disadvantage can be due to a number of reasons such as location (e.g. rural or regional commercial inactivity), decline or cessation of skill-set demand and/or industrial or business activity etc. The wave of disruption sweeping through 21st Century employment, including the need for new skill-sets and proficiencies focused on being functional in the digital economy, is already generating new cohorts of employment disadvantage. It is highly likely that this will only spread and intensify across trades, occupations and professions. As this occurs, with a resulting increase in the number of disadvantaged job-seekers and possible decrease in available employment positions, competition will rise; making access to advice, training, education and employment search opportunities important and critical.

To address the above, the following recommendations are made:

- A. Changes to non-linear careers and employment options, through the provision of economic and social support and assistance to support the transition to a successful freelance economy.
- B. Changes to industry skill needs in short term. The identification and management of skills needs via an integrated approach whereby government, industry and skills educators work together to identify, plan and respond to skills shortages across sectors and over time.
- C. Proactive longer-term investment by government into the future industries via alignment between education and industry portfolios and resulting training and enterprise support. This could form support for transitioning and entry level roles.
- D. Short just-in-time training to meet immediate industry needs and in line with immediate availability of freelance careerists. This could be achieved through use of badging for completion of industry driven training. Or it could be through micro credentials that can be recognised as part of formal skills training, allowing for people to undertake these when they have time to complete.
- E. Examining the duration of formal completions, as current metrics associated with completions within a set time frame will be challenged if skills training is undertaken in intensive bursts.
- F. Recognition that the notion of full or part-time work or study is changing and that consequently support must be provided via flexible delivery of training, but without compromising on quality outcomes.
- G. Examining the role of public providers by working with government across multiple sectors and geographies to provide relevant skills.
- H. Provision of job search and employability skills by assisting people to access information about employment opportunities, course and career advice, and seek employment. Other tactics could include job clubs and networks for various unemployed cohorts (e.g return to work mothers or those seeking career changes).

- I. Assisting people to develop 'soft skills' by developing a range of non-technical and life skills which can greatly assist individuals to access and maintain employment.
- J. Encourage the development of business entrepreneurial skills. Provide active support to start-up businesses through various types of business training, access to networks and support services as well as business advice to those seeking to successfully take their business ideas to market.
- K. Support community, as part of the social contract, by working within locales to meet social needs and solving community problems through experimental and collaborative practice.
- L. Provide industry-led skills development through the provision of just-in-time training to industry through a professional development program which utilises industry equipment.
- M. Explore complex public problems, regularly. Provide advisory services to identify various ecosystems (urban, social, community, industry) impacted by public development and urban redesign, in addition to recognition of new or emerging areas of focus requiring support.
- N. Consider Public Private Partnerships (PPPs) as a means by which market needs can be quickly attended to and see collaboration between government and industry deliver technology and skills training. A PPP model for consideration is one where intellectual property, technology and equipment become enablers of teaching and learning. In light of this, further consideration of acquisition or transfer of the prototype could be considered.
- O. Leveraging government investments in research to create social and economic impact via skills development and replication on an ongoing basis.
- P. Developing policy by connecting international and local communities via the creation of physical and social networks which facilitate collaboration, capture talent and sustainable business ecosystems. This could attract private sector investment in selected areas, lead to support for continued investment in specific industries, provide a basis from which service organisations' support participating businesses, contribute to the generation of employment, and assist in the building of skills in specific industries.
- Q. Ensure sustainable government policy in relation to projects that attract private investments in urban renewal and social revitalization projects. In doing so, financial support for ongoing investments can be derived as can consideration for market changers.
- R. Urban renewal: consideration of major government complex public and private projects. Founded on investments into urban renewal, collaboration between public and private sectors, planning and infrastructure which support skills use or development as well as underpinning social and economic factors.

6. Acknowledgements

The Fellow would like to thank the following individuals and organisations who generously gave their time and their expertise to assist, advise and guide them throughout the Fellowship program.

International Specialised Skills Institute (ISS Institute)

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

The International Specialised Skills Institute (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 a large number of 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 350 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

Fellowship Sponsor

The Fellow would like to acknowledge the Higher Education and Skills Group (HESG) of the Department of Education and Training, Victorian Government, who provided funding for this fellowship. HESG is a Victorian government organisation that facilitates participation and achievement in senior secondary and tertiary education and training by supporting partnerships between providers, employers and the community. HESG has shown great support and commitment in funding this Fellowship and providing the opportunity to expand the Fellow's knowledge and the capability of those who work in the sector.

RMIT University

The Fellow is indebted to the opportunities RMIT University has provided for this study as well as professional development. In particular, the Fellow would

like to thank Keith Cowlshaw, former Executive Director, Vocational Education for ongoing support and guidance and Martin Bean CBE, Vice-Chancellor and President, RMIT University for his leadership to address access and equity for disadvantaged students.

Additionally, the Fellow would like to thank RMIT Europe for their assistance during the Barcelona part of the research. Boaz Kogan for his insights and sharing his networks and Patricia Lora Febrero for recommending contacts. In particular Adriana Partal for support, translation and guidance as well as cultural contexts and insights during the interviews. The Fellow also offers heartfelt condolences to the people of Barcelona following the tragic events of August 2018.

Special thanks to Dr Daryll Cahill who has provided ongoing advice and direction throughout this Fellowship and to Jack Cahill for his observations and patience.

The RMIT Skills & Jobs Centre opened in May 2016 and works directly with local employers, to provide services for prospective students employers, apprentices, trainees, and unemployed or transitioning workers as well as current Vocational Education students.

Victorian TAFE Association

The VTA is Victoria's peak employer body for the public providers of TAFE in Victoria. Andrew Williamson, Chief Executive Officer, has assisted through support and ongoing advice to the Fellow.

Appendix 1: Interviews

- » Marc Capellades, Director Training, Eurecat
- » Elena Ferrero, Cristina Donenech, UGT Avelot
- » Josep Miquel Pique, President of Technova Barcelona
- » Adrian Guerrero, La Salle Technova
- » Miquel Barcelo, Innopro Consulting Board
- » Joan Prat Pujol & Rafael Sanches Martínez: Server d'Occupato de Catalana - Feina Activa Àrea d'Intermediació
- » Aina Pascual mSchools Coordinator, Mobile World Capital
- » Albert Forn Director Mobile World Capital
- » Marc Sans, Barcelona Activa
- » Sara Solache (student) & Guilia Grigois (program manager), Teamlabs (Monragon)
- » Jorgina Martinez, Creation Factories
- » Adriana Partal, RMIT Europe
- » Boaz Kogan, RMIT Europe

Appendix 2: International Learnings and Discussions

Career disruption – assumption of non-linear career paths for future workforce

The impact of digital disruption and global movement of industries will continue. This has resulted in changing work roles and practices as well as the need to recognise new career paths and patterns of employment. Career paths are no longer linear in that continued full time employment founded from entry level to retirement is no longer guaranteed nor consistent: lifelong careers founded on one set of acquired technical skills are diminishing.

Ultimately with new roles or redefined existing workforce roles requiring to adapt to technology there will be increasing numbers of adequately skilled workers and a need for individuals to continually adapt to new forms of employment. The impact on the workforce will mean that not only will manufacturing roles will be removed, but also those in more traditional professions which had previously not been subject to technological change.

Knowledge and learning acquisition in Spain

a) Role of Government

Throughout this Fellowship research the support, influence, policy and direction of government were pivotal to all institutes and consultants interviewed. Various government agencies from the local district, Barcelona City Council, Spanish National as well as European Union support were identified.

The role of government support varies in relation to each entity and their operations.

These are summarised below:

- » **Public Private Partnership.** The MSchools initiative is a formal public private partnership. This involves MWorld Capital collaborating with the Department of Education (Spain) to provide the MSchools initiative. MWorld provides IT platforms and expertise in relation to app development, facilitation of technical workshops and profile and the department provides learning and teaching resources to embed the pedagogy and incorporate the technology. Technology is the enabler underpinning the learning experience.
- » **Consolidation of Government Assets to implement research impact.** As per the Eurecat organisation, the government consolidated a number of technical agencies and seeks to leverage the research into skills development for economic and social impact
- » **Policy.** Area@22 has a key focus on 5 key areas of “knowledge clusters”: Information and Computer Technology (ICT); Bio-Medical; Design; Energy; and, Media. The idea is to connect both the international and local communities by creating physical and social networks to facilitate collaboration, capture talent and develop a sustainable business ecosystem. Through attracting the private sector to continue to invest in these areas as well as to attract service organisations to support these additional employment and development of skills are generated.
- » **Financial support**
 - » Organisations such as Avelot receive funding accessed via the government from central and European sources targeting specific unemployed cohorts such as unemployed youth.

- » Creation Factories is funded to support a school program for which they have hired two technicians and a manager. Creation Factories leverage this investment into other programs aimed at social need and refuse to use further government investment into these additional programs, based on their belief that government investment will lead to determination of metrics and activities not aligned to the philosophies behind these programs.

» **Government Department resources**

- » Server d'Occupato de Catalana - Feina Activa Àrea d'Intermediació provides support for the unemployed directly through employment portal and resources supporting job search and employability skills.
- » Barcelona Activa receives a range of government support for its current services – and is located in Area 22 as part of the urban renewal project. Ironically, Barcelona Activa are headquartered in the Olivetti Typewriters offices as a reminder of the impact of technological change to skills and employment

» **Urban renewal**

- » Area@22 is an example of major government complex public and private project. Founded on investments into urban renewal, collaboration between public and private sectors, planning and infrastructure.

» **Sustainable policy in relation to projects**

- » To continue to revitalise and attract private investments into urban renewal and social projects, sustainable government policies are required in order to overcome changes in government focus and investment.

b) Role of Skills Development

The role of skills development was discussed during all Fellowship interviews. Depending on the institution and remit, various focus areas in relation to their role in skills development was touched on.

These can be summarised as follows:

- » **Soft skills:** developing a range of non-technical skills which encompassed social entrepreneurship (Creation Factories, de la salle, MSchools) targeting a broad range of ages from school children to retired people who support community. Avelot actively works with unemployed youth to teach life skills via a range of social workers and welfare counsellors who work with the students prior to reaching the job search stage.
- » **Business entrepreneurship skills:** Barcelona Activa trains and actively supports start-up businesses through a range of business training, access to networks and support services as well as business advice to those seeking to successfully take their business ideas to market.
- » **Community:** meeting social needs and solving community problems through experimental and collaborative practice.
- » **Job search and employability skills:** Barcelona Activa provides assistance to different cohorts ranging from school children learning about employment opportunities, course and career advice as well as job search skills. It also provides a form of job clubs and networks for various unemployed cohorts such as return to work mothers as well as those seeking career changes. Avelot also provides training and support for unemployed youth as well as job seekers who access public lectures. SOC platform provides information on jobs and search skills which are in turn supported by face to face career advisers
- » **Industry led skills development:** Eurecat is an example of an agency providing just in time training to industry through its professional development program which utilises industry equipment.
- » **Complex public problems:** Advisory services on identification of various ecosystems (urban, social, community, industry) impacted by public development and urban redesign as well as identification of new or desired support for emerging areas of focus.

- » **User-led/volunteers and mentors:** technicians provide training on equipment in support of either formal professional development (Eurecat) or just in time training such as at Creation Factories or TeamLabs. This leads to competency training, rather than formal accredited training which in turn creates speed to market. The social innovation programs held by de la Salle are run by volunteers in order to reach volume.

c) Language conventions

In the case of Creation Factories it was noted that new language was being created to support the paradigm shift to new practice. This arises from a strong Catalan sense of language and also ownership of the practice. Additionally the adoption of the term 'Ni ni' has now been adopted in Spain to describe a generation of people who are not in work and not in study, and was commonly used in discussions.

d) Social contract

Activities both formal public initiatives as well as private initiatives have been developed that are aimed at social innovation. These included ones specifically related to the provision of community support to school children:

- » MSchools is evidence of platform development to create and scale ideas and services to support the community as well as provide educational outcomes for children, aligned to future focussed government initiatives.
- » de la salle initiatives include volunteers to support social innovation for 600 school children. Additionally, this is also provided through the support and mentoring of students in the lego challenge.
- » Creation Factories uses a formal approach to schools in support of community development ideas and social outcomes. The activities are extended to families and children outside of school program.

Appendix 3: International Visit Images



Image 1: 22@Barcelona - example of urban renewal



Image 2: The Torre Glòries



Image 3: 22@Barcelona - example of focussed new industry investment

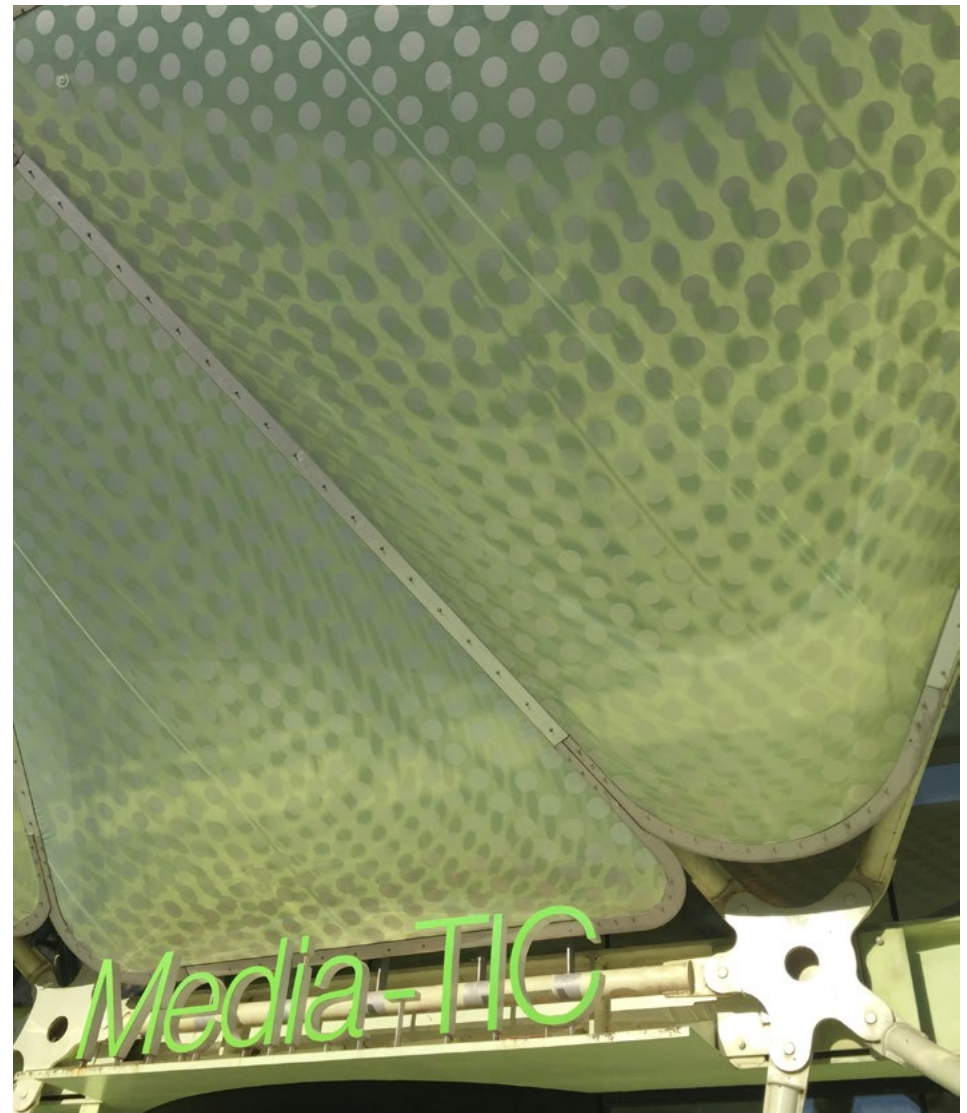


Image 4: The Media – TIC building outside



Image 5: The Media – TIC building inside



Image 6: Barcelona Activa at the Glories



Image 7: 22@Barcelona - example of new industry

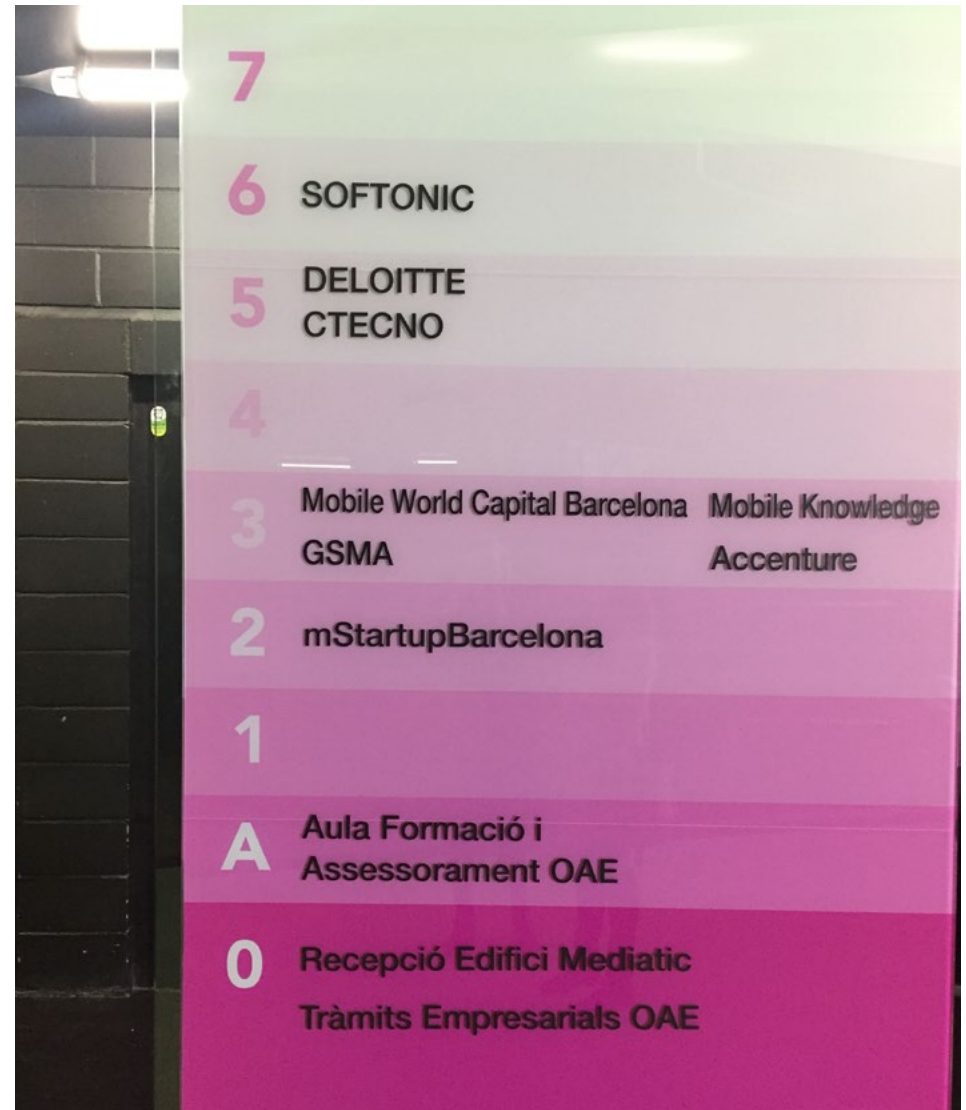


Image 8: Mobile World Capital Barcelona (The Media – TIC)



ISS Institute
Level 1, 189 Faraday Street
Carlton VIC 3053

T 03 9347 4583
E info@issinstitute.org.au
W www.issinstitute.org.au

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