



International
Specialised
Skills
Institute



PRACTICAL SUMMATIVE ASSESSMENT OF VOCATIONAL EDUCATION PROGRAMS

Using the Internationally Recognised
WorldSkills Standards Specifications

An International Specialised Skills Institute Fellowship.

MICK PRATO

Sponsored by The Italian Australian Foundation

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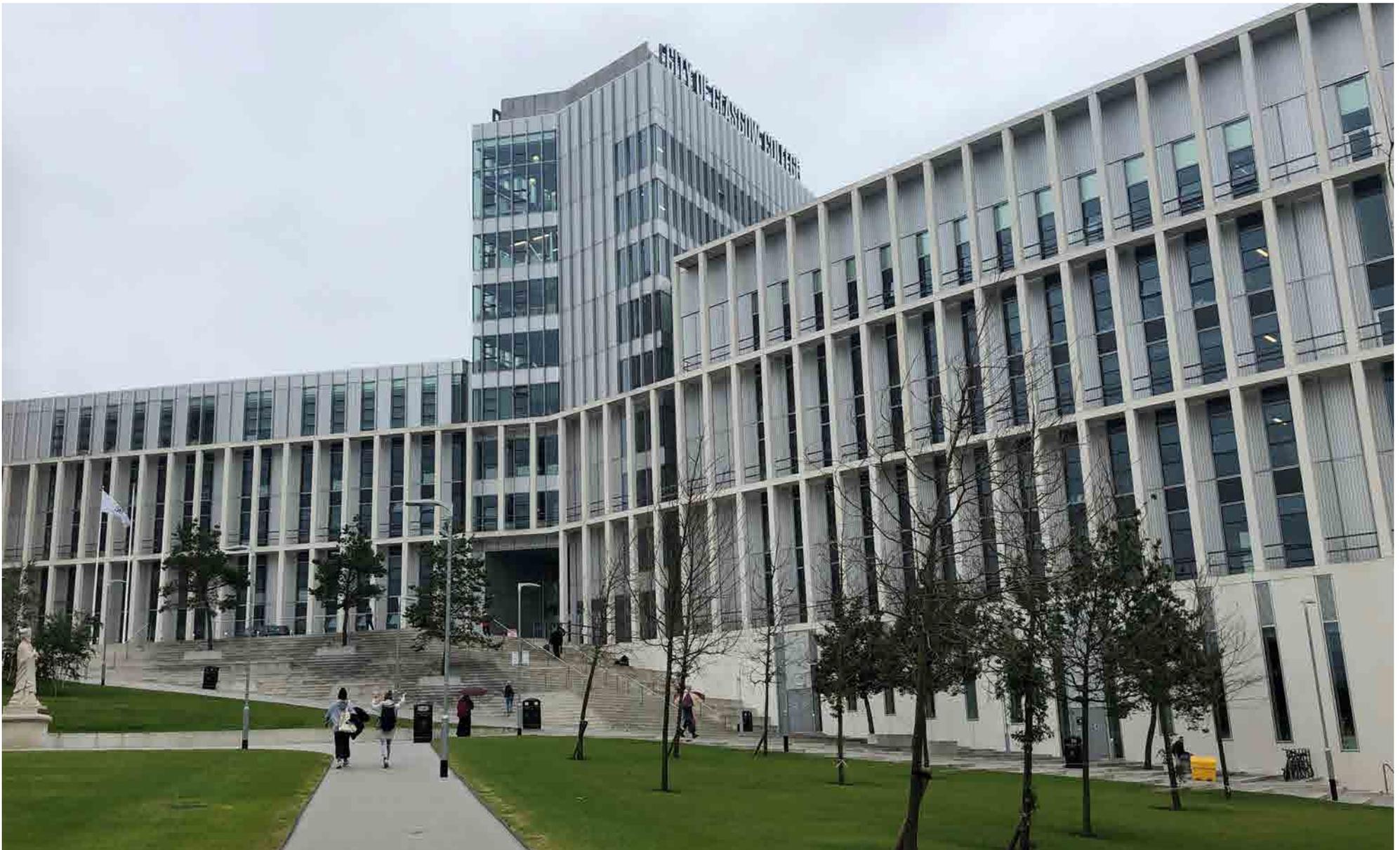
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City of Glasgow College

2. Executive Summary

The aim of this Fellowship was to explore the introduction of a practical summative assessment for Vocational Education and Training (VET) programs within Victoria, Australia using the internationally recognised WorldSkills Standards Specifications (WSSS).

Australia's VET system embraces competency-based training and assessment (CBT / CBA), which makes the measuring and recognition of excellence, challenging. There is a significant body of formal and informal research dedicated to the merits and pitfalls of CBA. Several commentators have in recent years suggested that CBA could be strengthened through independent and/or scored assessment. For example the 'Quality of assessment in vocational education and training' discussion paper by the Australian DET (January 2016) noted that "external assessment provides a clear mechanism to ensure the validity of the assessment process".

Numerous countries around the world do not use CBA and instead use a graded system to assess the skill level of VET students. Some of the newest and most exciting VET systems in the world have deployed the internationally-recognised WorldSkills model of assessment, with Russia being the greatest exponent.

WorldSkills is an international skills competition for young people that takes place every two years. It is the world's largest vocational education skills excellence event that truly reflects global industries skills expectations. The success of the integration of the WorldSkills assessment and competition methodology and the WorldSkills Standards Specifications (WSSS) into the VET systems of other jurisdictions suggests that it has the potential to strengthen and enhance the Victorian VET system.

The Fellowship was undertaken during August - September 2019 and involved meetings and interviews in Russia, Finland, UK, Hong Kong and China.

There is evidence to suggest that skills competitions can "raise quality, promote professional development and drive improvements in vocational training" (MoVE 2011). Although Australia has been involved with WorldSkills competitions since 1981, very little use has been made of the broader benefits and learnings from the competitions and their potential application within mainstream VET delivery. When analysing the differences between competitions and typical VET class activity, it is easy to define where enhancements can be made to the current system that will better prepare graduates for the challenges they will face throughout their careers.

Competition in any form brings out the best in people; pushes them to excel, promotes excellence, lifts aspirations and, if used effectively, can enhance learning (Fabien 2018) depending on the industry. There are currently very few ways in which VET students can test themselves and demonstrate their practical capability.

WorldSkills Competitions simulate as near as possible the day-to-day routine of the workplace, a task needs to be undertaken and completed accurately, within a tight timeframe, in what can be a highly stressful environment. Studies have been undertaken, most notably, the Modelling of Vocational Excellence (MoVE) (WorldSkills Foundation 2011), demonstrating the link between WorldSkills competitions and the development of the transversal skills of competitors.

The Fellow has witnessed this on countless occasions during his own involvement with WorldSkills competitions. Surprisingly, this growth and development is irrespective of the students finishing position within the competition. Many

previous WorldSkills competitors find that through the experience they now have the confidence to set-up their own businesses and in turn employ apprentices who then go on to compete as well.

Assessment is an assurance of quality which is important to industry, teachers/trainers, learners, further education institutions, the community and funding authorities (NCVER 1995). It has a vital role in the status and recognition of vocational qualifications.

Perhaps the greatest resource available to Victorian VET, through association with WorldSkills Australia, is the rigorous assessment criteria developed for the WS competition projects, enabling a graded assessment to more fully identify the level of competency of graduates. The assessments focus on competence through to excellence, using the WSSS. The WSSS have been developed through consultation with industry globally to determine the intermediate work roles of relevant skill areas with a weighting built into the assessment based on the identified relative importance as demanded by industry. With numerous projects and assessments already developed and aligned to Australian National Training Packages, potential capstone assessments are already available, negating the need to allocate funding and resources to establish the criteria required for implementation. Alignment to the WSSS assessments would ensure more mobility of qualifications in an ever-increasing global marketplace.

A key area where the use of the WorldSkills assessment model in VET could provide some benefits is in Vocational Education and Training in Schools (VETiS). The Victorian Certificate of Education (VCE) achieves a high status due to a robust common measurement of student learning, with students guaranteed a high-integrity independent and widely acknowledged assessment providing both internal and external validity of their learning. Unfortunately, students undertaking a VCAL pathway - which includes a mandatory VET component - are not currently given the same opportunity. Although VCAL achieves commendable internal validity through its flexibility, it is viewed as “lesser by some students, teachers,

schools and the wider community” (Brown & Sutton 2008). There are also cases of industry questioning whether VETiS graduates are really prepared to perform entry-level tasks within the workplace. Implementation of the WorldSkills model introduces the means to achieve an external assessment of ability. Culturally – alongside VCE – the application of a high integrity program of external summative assessments to VETiS subjects seems a requirement to install confidence in the abilities of these students.

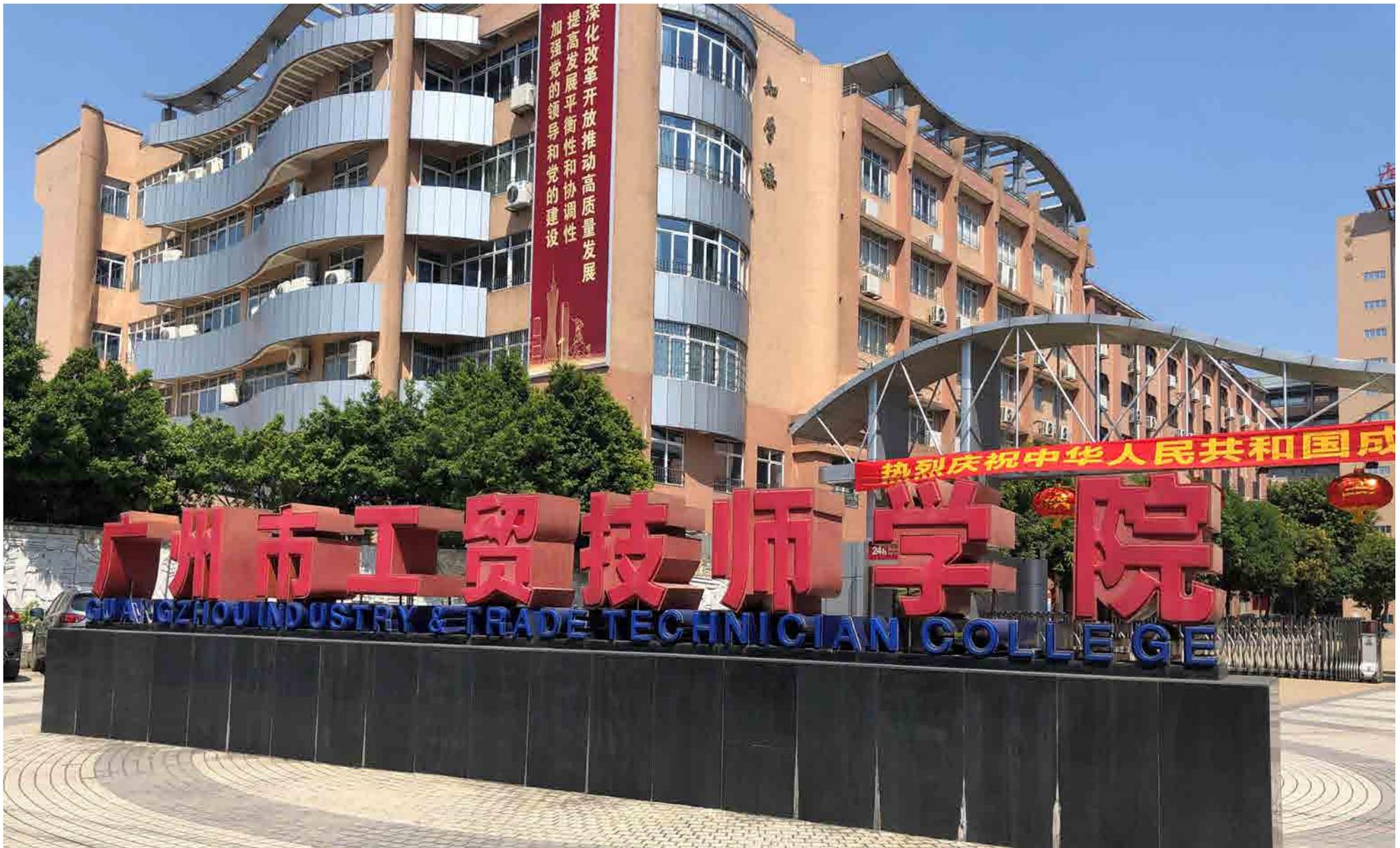
Current attention on the importance of high-quality, external skills assessment, by the Victorian Skills Commission for instance, suggests that practical external assessment should be implemented for scored-assessed VCE VET subjects to more accurately gauge student learning. This would provide a stronger indicator than what is possible through written examinations.

One of the most important observations of the Fellowship was that the WSSS were deliberately developed using broad learning outcomes. They are occupationally based, allowing them to be used as assessment frameworks across a broad range of VET systems. Australian Training Packages use level descriptors and outcomes, meaning the adoption of a WorldSkills methodology within Australia would be a relatively smooth transition.

The recommendations based on the Fellowship research are:

1. Trial the introduction of capstone assessments for VET qualifications using the WorldSkills methodology. Trial across a number of disciplines, prioritising projects and assessments that have already been developed which relate back to current training packages.
2. Trial the introduction of a practical summative assessment for all VET programs undertaken within Secondary Schools.
3. Introduce a practical summative assessment for scored-assessed VCE VET programs based on the WorldSkills model.

4. Embed WorldSkills competition methodology into the VET curriculum, to be used as a learning tool for students
5. Provide training for VET teachers in the WorldSkills methodology including a coaching and assessment component.
6. Create a global community of practice where jurisdictions can share their learnings and resources regarding the implementation of WSSS into their VET delivery and assessment.



Guangzhou Industry & Trade Technical College

3. Fellowship Background

Fellowship context

This Fellowship was undertaken to investigate the WSSS and their applicability and benefits (if any) to the Victorian VET system. The WSSS benchmarks more than competence, but also measures excellence. The research explored the increasing number of countries adopting the WSSS and WorldSkills competition methodology into their VET systems, with a view to develop potential strategies and enhancements to VET assessment and delivery to respond to industry feedback where it is not totally satisfied with competency-based assessment outcomes, making students ready for the challenges of the workplace and preparing them to become global citizens.

Founded in 1950, WorldSkills is the global hub for the development of skills excellence in young people. WorldSkills can best be thought of as an “international skills Olympics”, where young VET students compete against each other in structured skills competitions. WorldSkills brings youth, industries, and educators together to give young people the chance to compete, experience, and strive for technical mastery in their skill of choice. Ranging from traditional trades to multi-skilled technology careers in industry and service sectors, and supported by partners, industries, governments, volunteers, and educational institutions, the WorldSkills vision is to improve the world through the power of skills.

WorldSkills Australia (WSA) was formed in 1981. CEO Trevor Schwenke and the WSA head office are based in Melbourne. <https://www.worldskills.org.au/>

WorldSkills runs on a bi-annual cycle, with regional and the international competitions occurring one year, and the national championships in between. Winners at

regional competitions are eligible to compete at the national championships and potentially become part of Australia’s team – the Skillaroos – to compete at the international competition.

The WorldSkills Standards Specification (WSSS) provides the conceptual basis for the competitions. This framework is linked to Level 5 of the European Qualifications Framework and the Australian Qualifications Framework.

Key features of the WSSS framework comprise the requirement for each standards specification to be based on an occupation or work role; the inclusion of high-level skills, which feature prominently in the level descriptors; and a form of presentation that enables WorldSkills International (WSI) and its members to connect each skill competition to national and regional contexts and VET systems. Another key feature of the WSSS framework is a focus on “the standards’ ability to support competence as a baseline in order to focus on excellence as a key differentiator in intermediate technician work roles” (WorldSkills Foundation, 2012). An extensive consultation process with global industry underpins the WSSS framework, and includes a number of international workshops, as well as individual and small group workshops. WSI is of the view that the use of ‘competency’ can have a limiting effect on standards, and as a result, rather includes an overt focus on ‘excellence for competency’.

Learning outcomes form the basis for the assessment methodology employed and are set out in a series of level descriptors that indicate vocational performance. Attempts are being made to avoid a narrow focus on technical skills in competitions, by including a focus on the appropriate work context in which the skills are applied. The WSSS set out what a practitioner must know, understand and do within the

work roles represented by the WorldSkills Competition and identifies the skills, knowledge and understanding that constitute international skills best practice.

With the current trials of VET capstone assessments by the Victorian Department of Education, it makes sense to consider exploring assessment methods that have already been developed and are being used in various jurisdictions globally.

Fellowship methodology

The Fellowship consisted of a series of face to face meetings with VET stakeholders and colleges in Finland, the United Kingdom, Hong Kong and China. It also incorporated a forum alongside the WorldSkills Competition in Kazan, Russia, where WorldSkills members were given the opportunity to share their experiences of integrating the WorldSkills methodology into their core VET curriculum. Other participants explored the potential use of WorldSkills as a learning tool to enhance VET delivery in their own jurisdiction. The forum was attended by the Victorian Skills Commissioner, Mr Neil Coulson who gave an overview of the Victorian VET landscape and then opened discussion on challenges being experienced by countries represented at the meeting.

Fellowship period

The Fellowship took place during August and September 2019

Fellow biography

After finishing school, the Fellow undertook a carpentry apprenticeship. He worked as a sub-contracted carpenter for a number of years, before becoming a self-employed Building Contractor. The Fellow specialised in renovations and extensions, and employed and trained a number of apprentices.

In 2013, looking for a change, he entered the field of education, working as a Workplace Learning Coordinator, providing the link between schools and industry for students undertaking VETiS and VCAL subjects. It was during this time that the Fellow was introduced to WorldSkills, and volunteered as a Team Leader for the Victorian VETiS students competing at the 2014 National Championships in Perth. In 2015 the Fellow took up a role at WorldSkills Australia as the Victorian Regional Coordinator, being responsible for all WorldSkills activities within Victoria.

He is currently employed by the Victorian TAFE Association as the WorldSkills Victorian State Manager, which has driven a significant increase in the profile and engagement of WorldSkills within Victoria.

Abbreviations / Acronyms / Definitions

CBA	Competency Based Assessment
CBT	Competency Based Training
DET	Department of Education and Training
MoVE	Modelling of Vocational Excellence
VCAL	Victorian Certificate of Applied Learning
VCE	Victorian Certificate of Education
VET	Vocational Education & Training
VETiS	Vocational Education in Schools
WS	WorldSkills
WSA	WorldSkills Australia
WSI	WorldSkills International
WSSS	WorldSkills Standards Specification



HAMK University Finland

4. Fellowship Learnings

A prominent theme emerging through the Fellowship research was the host of challenges faced by many jurisdictions to formally develop and assess the employability skills required of graduates to succeed in their careers and place them on a journey of life-long learning. Overwhelmingly, colleges and stakeholders acknowledged the personal development and maturity of students undertaking WorldSkills competitions.

Following the 2011 WorldSkills London competition, the WorldSkills Foundation conducted a survey of the competitors and experts at the event in an effort to determine if skills competitions really contribute to the skills that economic and social development demand. The key findings of the report Modelling of Vocational Excellence (2011) found that the competitors and experts surveyed emphasised that WorldSkills competitions do more than extend technical skills, they enhance the skills and characteristics of teamwork, communication, persistence, practice and willingness to try new things (MovE 2011)

Although transversal /employability skills are inherently incorporated into the learning outcomes defined in Australia's training packages, there is little evidence of how these skills are assessed in the practical delivery of the units of competency.

Each section of the WSSS has been given a percentage of the total marks to determine its relative importance within industry as determined via consultation with businesses globally. The competition assessment and projects are then designed to follow the allocation of marks, as much as practically possible, with no more than a five percent variance allowed (so as not to distort the relative weightings).

Although the sections within standards do vary in accordance to individual occupations and the identified industry requirements, they typically contain the following designations for example:

- » Work Organisation and Management
 - » Health, hygiene and safety legislation, obligations and documentation
 - » Sustainability, waste management and recycling
 - » Time management and workflow
 - » Integrity and trustworthiness
 - » Professional Development
- » Communication and interpersonal skills
 - » Establishing & maintaining customer confidence
 - » The roles and requirements of related trades
 - » Working effectively in a team environment
- » Problem solving, innovation and creativity
 - » Understanding the common types of problems that can occur within the work process
 - » Diagnostic approaches to problem solving
 - » Trend and developments in the industry, including new products, materials and equipment

**The above is a representation of the WorldSkills Standards Specification for Wall and Floor Tiling*

It is also interesting to note that most of the countries visited do already undertake capstone assessments for the awarding of vocational qualifications, although these are applied in varied ways.

Hong Kong and Australia currently have similar approaches, with capstone assessments only for what would be the equivalent of our “Licensed Trades”.

Although yet to adopt the WorldSkills methodology, for the past few years China has been exploring the opportunity to more closely align their VET assessment to the WSSS.

The Guangzhou Industry & Trade Technical College in China is the Team China Training Centre for numerous competition skills, including Refrigeration & Airconditioning and Mechanical Engineering CAD. Whilst not conducting end point assessments, the college has extremely close links to local industry, who help design the curriculum and assessment, Stakeholders insist that it is the industry verified alignment to the local skill requirements, that gives graduates a near 100% employment rate upon completing their qualification.

Despite being relative newcomers to the WorldSkills movement, having joined in 2012, Russia has fully embraced the WorldSkills assessment methodology. Russia has utilised the experience and learnings of their involvement with WorldSkills competitions to undertake significant reforms of their VET system over the last five years. They have embedded the WorldSkills standards into their technical colleges, and are now conducting Demonstration Exams for the certification of Vocational Qualifications using the WSSS. To date, more than 90,000 students have already undertaken these tests. The same benchmark is also being applied to the training of teachers in various vocational fields. The reforms have seen an increase in the number of Russian school leavers entering VET rise from 19% to 59% over the same period.

The United Kingdom also employs the use of capstone assessments for their VET qualifications. These tests are administered by organisations that are independent from the Further Education colleges. Funding for the assessments is provided by the colleges, and is included in the service fees that they receive per student from the relevant department of education. The funding model for the assessment does, in some ways, create its own challenges (for example, assessments services are provided by the lowest bidder, rather than having a set standard fee for the different qualifications covered).

Unlike Australia’s competency-based assessment system, Finland uses a graded competency assessment. Skills demonstrations are required by Finnish students to achieve competency within their qualifications. These exams are undertaken within a workplace, with specially trained assessors from industry, with the teachers from the training provider in attendance. Students develop their own skill demonstration plan (how they will demonstrate competency) outlining the tasks that they will perform.

Students are able to use their attendance at WorldSkills national competitions and international competition training tasks as their skills demonstration.

The Fellowship learnings will be disseminated to stakeholders with the VET sector of Australia, through seminars, webinars and discussions with stakeholders, including the following:

- » Victorian Department of Education and Training
- » Victorian TAFE Education Leaders Network
- » Victorian Curriculum & Assessment Authority
- » The Australian Council of Deans of Education Vocational Education Group
- » Broader VET sector (through the VET Development Centre)
- » World Federation of Colleges and Polytechnics

5. Personal, professional and sectoral Impact

Identifying that WorldSkills is more than just a competition and that it can provide a greater benefit within a VET system are concepts that have never been seriously investigated in an Australian context. The Fellowship has given the Fellow the opportunity to have his thoughts and ideas consistently affirmed by the various stakeholders that he connected with overseas. This has given him more impetus to continue to articulate to policy makers the fact that a means needs to be identified to incorporate WorldSkills activities more fully in our VET curriculum, enabling access for far more students to gain the benefits of this methodology.

The Fellowship has allowed him to interact and converse with a wide array of people from diverse cultures, something he would never have thought possible. The Fellow has now established a global network of like-minded individuals and organisations that are endeavoring to raise the profile and status of Vocational Education and Training, whilst providing the greatest outcomes possible for those choosing to undertake trade and technical careers. He has been able to draw on their knowledge and experience to support these undertakings.

Several commentators have, in recent years, suggested that Competency Based Assessment (CBA) for VET could be strengthened through independent and/or scored assessment. For example:

Consideration should be given to how theoretical knowledge is best assessed in a competency-based system. These could include additional external scrutiny of outcomes, such as having a learner's skills externally assessed by an independent assessor.

Training Product Reform: the case for change, Issues for Discussion, 2017, Department of Education, Australia

Resource the Victorian Curriculum and Assessment Authority to work with interested industry consortia to develop, trial and administer a mechanism for the independent assessment of proficiency, such as capstone assessment (focusing on required knowledge and practical skills proficiency), in a specific industry/occupational area, e.g. for Certificate III in Carpentry as an initial trial. This action could be aligned with the re-introduction of trade papers.

Victorian Apprenticeship and Traineeship Taskforce Report, 2018, Victorian Skills Commissioner

It is noteworthy that both of the above commentators have sought to strengthen the current CBA arrangements with external assessment mechanisms, rather than do away with the CBA completely.

The use of competitions and an independent summative assessment of a learner's ability may have multiple applications within the Victorian VET sector:

VET Students

Embedding the WorldSkills methodology into the Victorian VET system will enable high quality training that students and industry can trust, aligned to industry and workforce* needs whilst developing the transversal and technical skills of students to enable them deliver to the demands of industry and have successful careers.

VETiS, VCAL & VCE

VCE is regarded highly because of its external assessment, the status of VETiS and VCAL programs would rise if they too had a valid, high-quality external assessment structure.

A practical summative assessment for scored-assessed VCE VET programs based on the WorldSkills model could also provide a truly indicative reflection of student outcomes.

Trade Papers

Many of the world's VET systems have long been conducting Trade or Occupation demonstrations prior to granting vocational qualifications. The use of WorldSkills projects and standard specifications as the basis for these examinations is becoming more prevalent. WorldSkills activities could provide an avenue to differentiate levels of competency accurately.

Teachers

Training VET instructors in the use of WSSS and the assessment criteria utilised in WorldSkills competitions will enhance the quality of VET delivery developing excellence in educational practice also ensuring high-quality learning opportunities for every teacher.

The use of a set of international standards within the Victorian VET system would provide an avenue to prepare learners be global citizens and providing them the skills to succeed in a fast-changing world.

Outcomes of this shift may include:

- » Enhanced status of VETiS – and hence, VET – amongst school communities, teachers, parents and students
- » Increased recognition of VETiS qualifications by industry
- » An increase in the skill level of VET students
- » Benchmarking of VET delivery and student outcomes
- » Skills gap analysis for individual student learning plans



Shenzhen Polytechnic

6. Recommendations and Considerations

There are numerous reviews of VET either recently released or underway, including the Joyce report *Strengthening Skills: Expert Review of Australia's Vocational Education and Training System*, the upcoming Macklin review into Vocational Education and the review into Vocational and Applied Learning Pathways in Senior Secondary Schooling being undertaken by the Victorian DET, examining how improvements can be made in the ways the VET sector prepares students with the skills and capabilities required by industry, and ensure that graduates are job ready. It is an opportune time to examine how the WorldSkills methodology may contribute in addressing some of the challenges facing the Victorian VET system.

Informed by the research, the Fellow recommends several key actions:

- » Introduce capstone assessment for VET qualifications using the WorldSkills methodology, in a number of disciplines projects and assessments have already been developed which relate back to current training packages.
- » Introduce a practical summative assessment for all VET programs undertaken within Secondary Schools.
- » Introduce a practical summative assessment for scored-assessed VCE VET programs based on the WorldSkills model.
- » Use competitions as a learning tool as part of the normal VET delivery.
- » Provide training for VET teachers of the WorldSkills methodology which includes a coaching and assessment component.
- » Create a global community of practice where jurisdictions can share their learnings and resources regarding the implementation of WSSS into their VET sectors.



Tuomas Eerola & Pirjo Tuominen - HAMK University

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