



**Victorian
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Involving industry in the co-creation of VET assessments: a European perspective | Rajesh Iyer, 2023

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1. Acknowledgments

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Awarding Body – International Specialised Skills Institute (ISS Institute)

The ISS Institute plays a pivotal role in creating value and opportunity, encouraging new thinking and early adoption of ideas and practice by investing in individuals.

The overarching aim of the ISS Institute is to support the development of a ‘Better Skilled Australia’. The Institute does this via the provision of Fellowships that provide the opportunity for Australians to undertake international skills development and applied research that will have a positive impact on Australian industry and the broader community.

The International Specialised Skills Institute was founded 32 years ago, by a small group of innovators including Sir James Gobbo AC, CVO, QC, and former Governor of Victoria, who had a vision of building a community of industry specialists who would lead the upskilling of the Australian workforce. The Fellowship program builds shared learning, leadership, and innovation across the broad range of industry sectors worked with. Fellows are supported to disseminate learnings and ideas, facilitate change and advocate for best practice through the sharing of their Fellowship learnings with peers, colleagues, government, industry, and community. Since its establishment, ISS Institute has supported over 560 Fellows to undertake skill and knowledge enhancement across a wide range of sectors which has led to positive change, the adoption of best practice approaches and new ways of working in Australia.

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The Victorian Skills Authority works in partnership with the International Specialised Skills Institute by funding the VET International Practitioner Fellowships. The Fellowship program focuses on developing opportunities within the VET sector to assist in building an Education State in Victoria that produces excellence and reduces the impact of disadvantage. In addition, the program is funded to support the priorities of Skills First, including developing capacity and capability, innovative training practices and increasing teacher quality within the VET sector as well as building industry capability and developing Victoria's current and future workforce.

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2. Executive Summary

Research on the topic *Involving industry in the co-creation of VET assessments* was initiated 3 years ago and resulted in a Fellowship from the ISS Institute and the Department of Education based on one of their identified priority areas – ‘Developing quality training with deep and meaningful connections to emerging or ongoing industry needs’.

‘Involving industry in the co-creation of VET assessments’ uses research-based findings to determine how RTOs can collaborate with industry to co-create assessments, which can serve to make the entire assessment process meaningful and relevant to the potential employee (learner), the potential employer (industry) and the industry expert (assessor). The vocational education sector uses the competency-based assessment approach to determine if students have demonstrated and provided evidence of the specified knowledge and performance components within individual units of competency. However, quite often there is a clear disparity between the methods of assessments chosen to determine the competency, and the way a competent performance would be determined in the workplace. Realistic assessment tasks that are relevant, current, and appropriate need to be considered to make a competency determination, and quite often this is not the case.

This Fellowship was granted when the world was in the early grip of COVID and the impacts on so many aspects of life were still unclear. In this instance a mixed research methodology was considered the best option to proceed with. The qualitative research component consisted of four specific parts - initial desktop research, consultation with industry & research experts in Australia, online meetings with European contacts and eventually, a visit to Europe to experience the collaboration process first-hand.

As a result of visits undertaken to a variety of vocational training institutes across countries in Europe including Spain, Denmark, Finland, Estonia and Hungary, some best practices were observed and recorded as part of industry-vocational institute collaborations. In Spain, discussions around IPOL (Industry Partnered Online Learning) and Riipen (industry collaboration platform) were undertaken to ascertain how industry requirements could be utilised to find solutions in the form of student projects. An overview of the VET system in Catalonia and how industry inputs feature in the development of curriculum was also studied along with an overview of the some of the VET projects being undertaken using Erasmus and other funding sources. An opportunity to see VET in action was undertaken at a private institute La Salle Gràcia, along with obtaining perspectives from a coordinator, trainer, and students on their experiences. In Estonia, an overview of the SD4X project undertaken by the University of Tallinn that involved industry was obtained and discussions undertaken with members of the University on how collaboration between the university and industry was undertaken through research initiatives. A visit to the Espoo campus of Omnia in Finland provided an opportunity to observe industry-driven learning outcomes being

practised by students in a variety of courses including horticulture and construction. There was also discussion around the VET framework in Finland and presentations on best practices followed by Omnia in curriculum development, collaboration with industry and development of assessments. A visit to the Kolding campus of IBC in Denmark provided opportunities to interact with a program coordinator, industry liaison representative, teacher, and students – all with a view to understand the involvement of industry in the development of curriculum and assessments. An understanding of the Hungarian VET framework as well as an overview of the projects being undertaken by NSZFH as part of UNEVOC was attained during the visit to Budapest. Discussions with industry partners from the security industry around their participation in the development of curriculum for VET qualifications was undertaken as part of this visit along with an opportunity to see VET in action at a member school of the Budapest Technical Vocational Centre by obtaining perspectives from trainer and students on their experiences.

The Dual VET system in Europe offers several advantages to both students and employers. For students, it offers the opportunity to acquire practical skills and industry-specific knowledge while earning a salary. Students can also apply theoretical knowledge to practical situations, thereby enhancing their understanding of the subject matter. This system offers students an excellent chance of employment upon graduation, as they will have practical experience and industry connections. Statistics for the Australian apprenticeship model obtained from NCVET were used to compare against the European Dual model and it was determined that less than 10% of students undertook VET study as apprentices and this compared quite unfavourably with the high rate of uptake for the Dual system (between 40% and 70% in most countries surveyed). However, 91.8% of Australian apprentices got employment upon completion of their qualifications, which is more than twice the figure for non-apprentices, and this statistic compared very favourably with some of Europe's highest-ranking countries such as Denmark and Hungary.

The report highlights the 6Rs Model and suggests that key considerations when designing assessments include the ability to make them *relevant, remarkable, regulated, resourceful, reflective, and rewarding*. The three main recommendations that the report makes include:

- ensuring industry consultation for assessments in the TAS,
- providing greater work placement opportunities for VET students, and
- bringing real industry problems into the assessment space

The report suggests using platforms such as Riipen to contextualise assessments to meet industry needs which in turn allows use of real-world problems as opportunities for students to come up with real-world solutions.

The Fellow's own personal and professional developments have been enhanced immensely because of the Fellowship research and travel undertaken. The opportunities to explore international projects and liaise with overseas experts from the VET sector who work closely with industry have provided new insights into the benefits of collaboration, while also opening new ideations. This exposure will be vital in devising new, and more robust assessment strategies and methodologies in the vocational sector, and thus benefit the Fellow's present role as Manager Learning & Teaching Innovation. Attainment of supporting evidence and statistics through the Fellowship journey would be pivotal when discussing assessment approaches both, with subject matter experts (SME) in the VET sector as well as industry representatives.

The Fellow is in the process of commencing a pilot project by involving industry in the co-creation of assessments in the Certificate IV in Instrumentation and Control qualification. The findings of this pilot can showcase an actual instance of how this collaboration process works and can be used to highlight how close collaboration and co-operation between institutes and industry can result in highly meaningful assessments for students and reduce the gaps that industry experiences quite often, in terms of underprepared graduates entering the workforce. The potential for such collaboration could eventually be embedded within the training and assessment strategy (TAS) thus, officially endorsing the practice and leading to a behavioural shift in institute-industry relations.

3. Fellowship Background

3.1 The context

This Fellowship is focused on Priority Area 1: *Developing quality training with deep and meaningful connections to emerging or ongoing industry needs*. The topic of this research ‘*Involving industry in the co-creation of VET assessments*’ aims to identify how industry and RTOs can partner and co-create assessments, thus ensuring competencies of learners are based on the actual industry performance requirements.

Industry representatives often have limited understanding of the VET framework and Standards. Trainers and assessors on the other hand have solid understanding of the content, but need inputs from industry on existing trends, key skillsets, and the actual application of those skillsets in the workplace. Having industry co-create assessments in conjunction with RTOs will ensure that the learning is focused clearly towards achieving those specified competencies as specified in the units of competency, but using methodologies, techniques and structures required by the industry, and useful to the learner.

Based on observations within the VET sector and substantiated through discussions with trainers, assessors and those well-versed with compliance in vocational education, it can be determined that there is a clear disparity between the methods of assessments chosen to determine the competency by the RTO, and the way a competent performance would be determined in the workplace. Realistic assessment tasks that are relevant, current, and appropriate need to be considered to make a competency determination.

The Australian Government’s investment of \$525.3 million in 2020 towards Delivering Skills for Today and Tomorrow was reasoned as, ‘Australia’s capacity to grow, compete and thrive in a global economy has become more dependent on employers being able to access and use the right skills at the right time’.

An OECD (2018) report titled ‘Getting Skills Right: Australia’ states the need for “better communication between employers and service providers in order to improve understanding about skill needs”. This was also corroborated through ASQA’s 2018 Annual Report that identified highest levels of non-compliance from RTOs related to Standard 1.8, which pertains to quality of assessment.

The Australian Industry and Skills Council (2017) in its report identified that collaboration with employers, and co-operation between industry and education is expected to be crucial for developing a dynamic, appropriately skilled workforce.

The Department of Training and Workforce Development (2016) in its report has clearly indicated that industry representatives/employers need to take an active part in the planning of the assessment process, as their involvement will be of practical value to RTOs and learners and may increase

their ongoing commitment to, and satisfaction with, the quality of training and assessment that RTOs offer.

In its National Consultations Summary (2015), The Department of Education identified and proposed major VET reforms, including:

- concerns that consultation with industry associations and ISCs is not sufficient as they do not represent all of industry.
- RTOs should engage with individual business to customise training.

An NCVET research paper (2012) identified that “the consistency and comparability of assessments are further compromised because vocational education and training uses diverse assessment methodologies to determine competence”.

The National Centre for Vocational Education Research’s survey (2021) found that small businesses are primarily concerned there’s not enough focus on practical skills and that VET professionals needed to consult with small businesses, so they train the right people with the right skill set.

‘Involving industry in the co-creation of VET assessments’ aims to determine how RTOs can collaborate with industry to co-create assessments and get assessment methodologies right. This collaboration can serve to make the entire assessment process meaningful and relevant to the potential employee (learner), the potential employer (industry) and the industry expert (assessor). Quite often, the methods of assessments chosen to determine the competency in vocational education does not relate to the way a competent performance would be determined in the workplace. While industry has a considerable say in the VET system, employer engagement with the system is not compulsory (Stanwick 2009). Co-creation of assessments could result in the purposeful partnership between the RTO and industry to engage, problem solve and devise assessment tools that are meaningful, engaging, current, appropriate, and relevant for learners to enable effective use of their competencies, in the workplace. This will also ensure that the learning is focused clearly towards achieving those specified competencies as specified in the units of competency, but using methodologies, techniques and structures required by the industry.

3.2 Methodology

This Fellowship was granted when the world was in the early grip of COVID and the impacts on so many aspects of life were still unclear. One of the main challenges initially, was to create online networking contacts as meeting people locally or internationally was not possible.

The Fellow was provided an opportunity to undertake some online workshops with the Australasian Vocational Education and Training Research Association Inc. (AVETRA) on developing a research

methodology and selecting research methods. In this instance a mixed research methodology was considered the best option to proceed with. The overall purpose and central premise of mixed methods studies is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems and complex phenomena than either approach alone (Creswell & Plano Clark 2007).

3.2.1 Quantitative research

The quantitative research component consisted of four specific parts:

a. Initial desktop research

The desktop research was initiated during the early stages of COVID when prolonged periods of lockdowns rendered face-to-face meetings or even local travel virtually impossible in Melbourne. The research focused on two key areas – substantiating the identified gap in collaboration between industry and institutes, especially in the areas of assessment consultation and design; and identifying projects, case studies, and collaborative practices between industry and vocational institutes in different European countries where VET practices were extremely strong (Finland, Denmark) or strongly emerging (Hungary).

b. Consultation with industry & research experts in Australia

This phase of the research involved contacting and liaising with several individuals across educational institutes and industry. These meetings (mostly online) and networking opportunities were utilised to strengthen the direction of the actual research, understand specific concerns around skills shortages in certain industries such as the financial sector, and obtain suggestions on institutes to visit and individuals to contact in Europe.

c. Online meetings with European contacts

Once the institutes to visit and the individuals to meet up in Europe were identified based on the above two phases, initial meetings were initiated with a range of European principals. These meetings were to provide them with the actual purpose of the Fellowship and to seek initial information about their strategies and best practices in terms of industry-institute collaboration. It also provided an opportunity to finalise the Fellow's itinerary and provide the potential hosts with the Fellow's actual expectations during the proposed visit.

d. Visit to Europe

The actual trip to Europe was undertaken in the month of October 2022 and resulted in visits to nine institutes and organisations across five countries – Spain, Estonia, Finland, Denmark,

and Hungary. The visits provided an opportunity to meet, observe, and discuss with a range of stakeholders – teachers, coordinators, institute heads, project managers, students, industry experts, government officials – their perspectives and strategies on engagement and collaboration, with a view to attaining best learning outcomes. The quantitative nature of data obtained was invaluable in terms of making some sound evaluations and recommendations for the Australian VET sector. A questionnaire was devised and used as part of the information-gathering process (refer to appendix 1).

3.2.2 Qualitative research

The qualitative aspect of the research has focused on some of the following statistics, which in turn have assisted with comparing the European and Australian apprenticeship systems.

- Percentage of secondary school students that take up VET study in Europe
- VET graduates (20–34-year-olds) with a work-based learning experience as part of their vocational education and training (%) in 2021
- Employment rate for recent VET graduates (20–34-year-olds) (%)
- Latest VET statistics in Australia

3.3 Fellowship Period

The Fellowship was spread over two years (2021 -2023) as the opportunity to travel was curbed by the pandemic. The overall Fellowship experience is split into seven core stages.

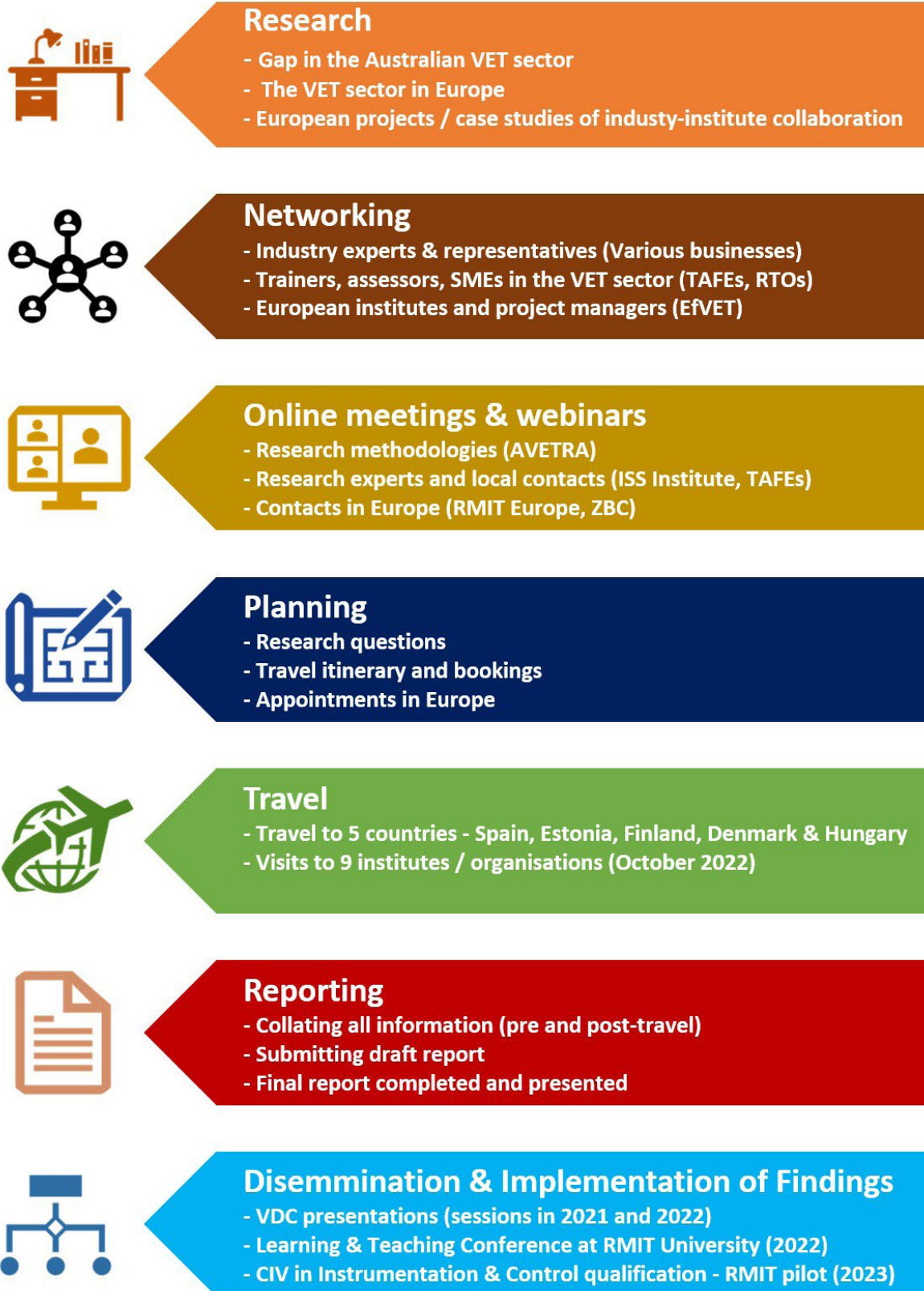


Figure 1. Seven core stages

3.4 Fellow Biography

Rajesh Iyer has worked in the education sector both at higher education as well as vocational education in various teaching and non-teaching roles since 2006. Rajesh has a strong understanding of compliance in the VET sector and has worked in roles that require getting qualifications on scope, organisation & management of training programs, and preparing and partaking in audits. Besides, he has a sound understanding of learning design which he applies in conjunction with pedagogy when designing and developing student learning resources. He has always been extremely passionate around the topic of assessments in the vocational education space and how things could be improved for the benefit of the student cohort, especially in terms of ensuring that competency-based judgements were related to clear workplace outcomes.

Over the last eight years, Rajesh has been largely involved in managing teams that assist with the design and development of VET and HE resources with a growing emphasis on online learning. In his present role at RMIT University, Rajesh works as Manager Learning and Teaching Innovation within the College of Vocational Education with a team of learning, digital and mixed reality designers to assist with the development of engaging learning resources and assessments for the various program areas.

Rajesh holds an MBA in International Management, the Diploma of Training Design and Development, the Diploma of Vocational Education and Training and the Certificate IV in Training and Assessment.

4. Fellowship Learnings

4.1 Introduction and overview

Based on the initial research undertaken as well as feedback obtained from industry contacts, trainers & assessors, and heads of departments across various VET institutes within Melbourne, assessments have been identified as one of the major areas of concern within the VET sector. A review of assessment in nationally recognised Vocation and Education Training (VET) courses identified a number of critical issues associated with competency assessment (Ewing 2017). It can also be corroborated through ASQA's report in 2018 that a lack of quality assessments impacts the very industries where students seek employment. This is quite ironic since it is these very industries that can provide sound inputs on best assessment practices and methodologies to be employed.

While the units of competencies within training packages offer suggestions on potential assessment methods, these are open to interpretation, and individual RTOs can formulate what they perceive to be the best methods. However, if industry were to be involved in the co-creation of these assessments, then there is an opportunity to use these assessments across the VET sector, with a strong sense of belief that students are being assessed appropriately and correctly. Not only would the competencies specified within individual units be assessed, but methods of assessment would also be relevant and current to the practices within workplaces.

It must be remembered that the main driver for determination of competencies in the VET sector is assessments, and therefore once RTOs get assessments right, then the learning that leads to assessments can also be set right. Quite often, there is a strong disconnect between the training and assessment, as content experts (trainers and assessors) could be at variance with what industry demands. If there is value addition through sound collaboration around the assessment methodology, it lends to a unique student experience, creates a sense of reassurance to industry and makes trainers and assessors extremely confident in determining student competencies.

Through a comprehensive research process undertaken to study the VET sector's initiatives in Europe especially, around collaboration between institutes and industry, it was determined that visiting some key destinations in Europe to maximise learning around industry partnerships with institutes especially in the assessment space would be the logical step towards this Fellowship.

4.2 The European perspective

Some of the organisations that were studied as part of the Fellow's initial research had incorporated best practices in working with industry to develop training programs including assessments.

Zealand Business College, one of Denmark's largest business colleges collaborates extensively with industries to determine the best training methods and assessment approaches, so that

students exit the program with the skillsets desired by industry (ZBC 2023). One major project that ZBC was involved in, was a collaboration with Danish retail chain Coop, to develop a VET program that assisted in improving the attractiveness of VET to those wanting to work within the retail industry, by matching of skills supply and demand (Durazzi 2017). This collaboration showed that it could also enhance the possibility of improving social inclusion of young people in VET, as businesses perhaps tend to have a higher focus on young people's willingness to learn instead of focusing solely on academic skills. It was the desire to learn more about such initiatives that prompted a visit to International Business College (IBC), a subsidiary of ZBC in Denmark.

The European Forum of Vocational Education and Training (EFVET) is a leading professional association with the principal aim of facilitating networking and partnership with industry (EFVET 2023). A comprehensive study of some of their projects undertaken in Europe helped identify institutes such as Omnia, Finland, NSZFH, Hungary and Tallinn University, Estonia who were using strategies such as

- using students' network to develop and increase the VET-Business partnerships.
- increasing the quality of assessments by truly engaging students on a personal and professional level.

With such preliminary findings to set the tone, subsequent contacts in Europe sourced through extensive networking, and supported by initial online meetings with some European principals, a total of nine organisations across five countries – Spain, Estonia, Finland, Denmark, and Hungary were identified and visited as part of the Fellowship research.

4.2.1 RMIT Europe, Barcelona (Spain)

RMIT Europe is the European hub of RMIT University, based in Barcelona, Spain, and it aims to engage with industry, government, and other stakeholders in Europe, Asia, and Australia to develop innovative solutions for real-world challenges (RMIT Europe 2023). One of the key areas that RMIT Europe focuses on in terms of engaging with the industry is through the Industry-Partnered Online Learning (IPOL) initiative. It was a pleasure to meet with Tallulah Forrest, Education Partnerships Manager who provided the Fellow with an overview of IPOL and was also instrumental in organising and accompanying the Fellow to all the other meetings in Spain.

Since the end of 2019 IPOL has been taken up at RMIT as part of the suite of industry-connected learning opportunities that support Ready for Life and Work. With the global pandemic and mobility limitations, IPOL has become a powerful tool to continue offering students the possibility of an international industry connected experience, reaching even more students than previously, in a safe and sustainable way. IPOL also provides a means of staying connected with industry partners and alumni worldwide. RMIT Europe and the Global Experience Office supported 39 IPOL projects



Figure 2. At RMIT Europe's Barcelona campus with Tallulah Forrest

Besides, some of the other key initiatives of RMIT Europe include:

- European research projects: As a research partner for European Commission funded projects, they work with research project consortia to match the expertise of RMIT researchers with projects and challenges focused on finding solutions to critical problems impacting communities and the environment.
- Collaborative R&D: RMIT Europe connect their industry partners in Europe with outstanding researchers and research capabilities through cutting edge research facilities and equipment for prototyping, product testing and collaborative research. Their team works with industry to develop tailored and innovative solutions to meet business needs and rapidly improve productivity.

Overall, RMIT Europe is committed to engaging with industry partners to develop innovative solutions that address real-world challenges and contribute to economic and social development in Europe and beyond.

from 14 courses during Semester 1 2021, with a total of 350 students. 97% of the projects were sourced via Riipen, the online platform used since 2020, with projects in Canada, USA, UK, France, and Spain.

Since 2020 IPOL has been supported by the online platform Riipen, which facilitates the sourcing of industry projects and the collaboration between students, academics, and industry (refer to appendix 2). Students and staff participating in IPOL experiences using Riipen during S1 2021 were surveyed at the end of their experience and the overall satisfaction with the Riipen platform received an average score of 7.8/10.



Figure 3. RMIT Europe's Barcelona campus

4.2.2 Mondragón University, Mondragón (Spain)

Mondragon University, located in the Basque Region of Spain, is a leading vocational education provider that has implemented a range of strategies to engage students and involve industry to meet student learning outcomes.

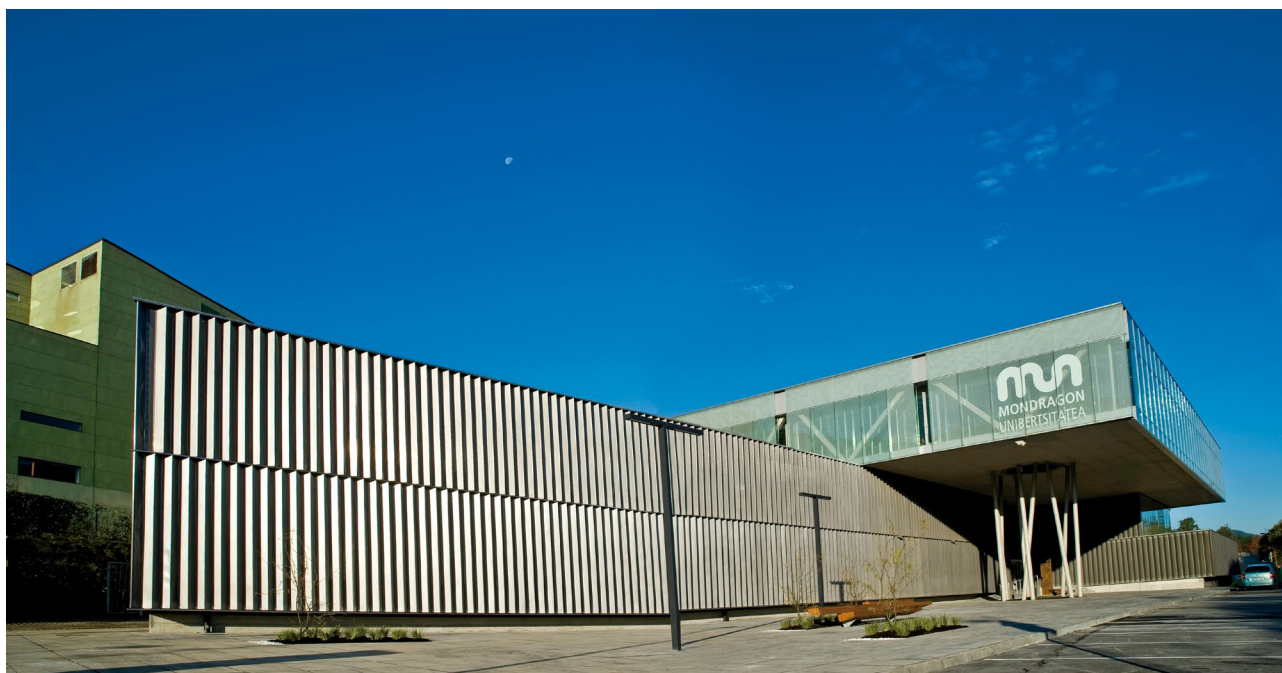


Figure 4. The campus of Mondragón University

The Fellow had the opportunity to meet with Modesto Heis (International Relations), Gorka Aretxaga (Academic Service) and Manex Imaz (Professor) who provided a comprehensive overview of the competency-based VET system in Spain.

One of the strategies employed by Mondragon University is a focus on project-based learning. This approach enables students to apply theoretical concepts to real-world problems, working collaboratively with peers and industry partners to develop practical solutions. By engaging in hands-on learning experiences, students are better able to understand the challenges and opportunities of their chosen field, and they develop the skills and knowledge needed to succeed in the workplace (Mondragon Unibertsitstea 2018).

Another key strategy employed by Mondragon University is the Dual Education model. For example, all students enrolled in their Sales and Retail Space Management program can alternate between working and studying for a year through the DUAL education program. The program lets students take your first steps in the professional sphere with a paid work contract. Most organisations tend to value prior work experience highly when recruiting for candidates and the Dual model lets students acquire that experience, either to apply within the same company they are undertaking

the DUAL experience in, or to have a distinctive CV and improve their chances of being selected for job offers in the future.

Mondragon University lives its values with a training proposal that combines training with personal and professional development. The fact that it is a member of the Mondragon Corporation, which includes more than 257 companies, allows students to meet the needs of the working world when undertaking their training. This direct link with the companies ensures an extremely high percentages of placement of their graduates.

4.2.3 Fundació BCN Formació Professional, Barcelona (Spain)

Fundació BCN FP Barcelona is a non-profit organisation that aims to promote vocational education and training in the city of Barcelona and its surrounding areas. The organisation is dedicated to supporting students, teachers, and professionals in their career development through various initiatives and programs.



Figure 5. Outside the Fundació BCN Formació Professional office with Jordi Castillo and Tallulah Forrest

The Fellow had an opportunity to meet with Jordi Castillo (Manager for European Projects & International Affairs) who provided an overview of the VET system in Spain and highlighted the key initiatives of the City Council of Barcelona which represented 156 VET schools each having between 500 to 3000 students enrolled. There is strong collaboration with industry to 'adapt the curriculum' (Fundació BCN Formació Professional 2023). The Dual system is being strongly promoted within all VET institutes and there is a minimum requirement of 350 hours of training within the workplace as part of all VET qualifications undertaken. Fundació BCN FP Barcelona is part of a recent Erasmus project Port VET Hub that raises awareness of VET education in line with the professional profiles, skills, needs and trends of four major port cities within Europe (refer to appendix 3).

A key initiative of Fundació BCN FP Barcelona was the Company Simulation Project (SEFED). SEFED is an innovation program that seeks to complement VET students' education with hands-on knowledge to enhance transversal skills of VET students and thus facilitate their insertion into the labour market. The goal of this project was to sponsor Barcelona VET centres interested in applying the SEFED methodology for educational purposes.

In the academic year 2019-2020, an international pilot project between two simulated companies, ECAT-Barcelona and VDAB Campus of Antwerp, Belgium was implemented for the first time and this simulated company project was directed at all VET schools that teach Commerce & Marketing as well as Administration & Management.

In addition to vocational training, Fundació BCN FP Barcelona also works closely with local businesses and employers to ensure that the vocational training it provides is relevant to the needs of the job market. The organisation collaborates with companies to identify the skills and qualifications that are in demand, and then tailors its courses to meet those needs.

4.2.4 La Salle Gràcia, Barcelona (Spain)

La Salle Gràcia, located in Barcelona, Spain, is a leading vocational education provider that has implemented a range of strategies to engage students and involve industry to meet student learning outcomes.

The Fellow met with Rafael A. Espinosa Valencia, Head Department of Economics and Business who showed me around their campus and introduced me to students and a teacher from the Fashion Design course. It was interesting to note that all La Salle Gràcia's teaching staff are also currently working within their respective industries. The Fashion Design course teacher was an entrepreneur who had her own design studio and offered students opportunities to visit and interact with real-life clients as part of their studies.



Figure 6. At La Salle Gràcia with Rafael A. Espinosa Valencia and a Fashion Design teacher

The VET courses offered by the institute utilise the following three core principles to ensure that their students get a wholesome learning experience (La Salle Gràcia 2023):

- Training in work centres - students, within the training cycles of their qualification, will carry out training in work centres which will facilitate their employment in the professional world. This training allows them to put into practice the knowledge acquired in the classroom.
- Dual training - a professional training where the student reduces the class hours in the second year and goes to work for a company in the sector for a whole year.
- Industry employed staff - Qualified, professional teachers who are active in their own companies.

4.2.5 Fellow's key findings and observations in Spain

The Spanish VET system is a comprehensive educational framework that provides students with practical skills and knowledge for specific occupations. It is designed to meet the needs of both individuals seeking to enter the workforce directly and those aiming to continue their education at the tertiary level. This system follows a dual education model, combining theoretical classroom instruction with practical on-the-job training. Students split their time between vocational training centres and participating companies, gaining hands-on experience in their chosen field. The introduction of the dual system in VET offers young people an insight into the labour market. Based on first preliminary data - available from training centres or regional authorities - the employment rate of dual VET learners is usually higher than in traditional school-based VET (Mora et al. 2022).

The Spanish VET system offers a wide range of vocational training programs covering various fields such as healthcare, engineering, business administration, tourism, information technology, agriculture, and more. This diversity allows students to choose a program that aligns with their interests and career goals. VET qualifications obtained in Spain are recognised both nationally and internationally, ensuring that graduates have the necessary credentials to pursue employment opportunities or continue their education in other countries.

The Spanish VET system maintains strong ties with the industry through partnerships and collaboration with companies and employers. This ensures that the training programs are aligned with current industry needs, enabling students to develop relevant skills and increase their employability.

4.2.6 Tallinn University, Tallinn (Estonia)

Tallinn University is a modern and dynamic research university in Estonia with a leading role in promoting an intelligent lifestyle through education, research, and a unique collaboration across disciplines. The University views an intelligent lifestyle as making research-based decisions to improve society in general and the well-being of its citizens (Tallinn University 2023). The high-quality content and the practical outcomes of the training are ensured by a systemic and knowledge-based approach and interactive learning methods.



Figure 7. The Tallinn University campus



Figure 8. At Tallinn University with Külliki Tafel-Viia

The Fellow had the opportunity to meet with Külliki Tafel-Viia, Head of Development Projects at the University and recently appointed Head of Knowledge Management with the Ministry of Economic Affairs and Communications of Estonia. Külliki was involved in the development of an Executive level training program called Service Design for Executives (SD4X) at Tallinn University, in collaboration with Maastricht University Service Science Factory, Netherlands, Stockholm School of Economics in Riga (a branch of SSE, Sweden) and Brand Manual, an international service design and branding agency with offices in Tallinn, Maastricht and Stockholm. This service design program has been developed to teach the practical tools and processes of service design, along with the necessary facilitation and pedagogical skills, to streamline workshops and to empower and inspire staff members, to spread the same mindset and skills throughout the entire organisation (refer to appendix 4). The program combines extensive academic and practical knowledge into a compact, hands-on program. It is specifically designed to provide actionable and relevant skills to senior executives both in private and public organisations. The ultimate goal is for participants to work on their organisational challenge while learning service design. The program structure allows participants to actively use the mindset, processes, and tools in the periods between the weekly sessions, to solve their real-world challenges.



Figure 9. At Tallinn University with Marika Vilisaar

The Fellow also met with Marika Vilisaar, Legal Advisor and Project Manager, and Mart Repnau, In-house Adviser, University-Industry Collaboration to discuss the strategies employed by Tallinn University to involve and obtain industry involvement. The University partakes in industry-led or involved projects, takes part in regional research and development programs, and shares the research-based findings with academics who can then implement them within their programs.

4.2.7 Omnia, Espoo (Finland)

Omnia, located in Espoo, Finland, is an innovative vocational education provider that has made a name for itself in engaging students and providing industry-based learning outcomes. The institution has developed a range of strategies aimed at ensuring students are fully engaged in their studies and have the necessary skills and experience to succeed in the modern workplace.

One of the strategies employed by Omnia is a strong focus on student-centred learning. This approach puts the student at the centre of the learning process, allowing them to take control of their own learning experience. To facilitate this, Omnia has developed a range of interactive learning tools and resources that enable students to work at their own pace and focus on areas that interest them (Omnia 2023).

Another key strategy employed by Omnia is a strong partnership with industry. This collaboration has enabled the institution to offer courses that are directly relevant to the needs of employers and provide students with valuable work-based experience. To ensure that students are equipped with the necessary skills and knowledge, Omnia has developed close partnerships with local businesses, providing students with work placements, mentorship opportunities, and access to state-of-the-art equipment (Omnia 2023).



Figure 10. Students in horticulture courses have their own 'sandpit' to create landscaping projects.

To further enhance the learning experience, Omnia has developed a range of experiential learning opportunities. These include practical projects, simulations, and role-playing exercises that enable students to apply theoretical concepts in a real-world context. This approach helps to reinforce learning and build confidence, ensuring that students are fully prepared for the challenges of the modern workplace.

Another innovative approach employed by Omnia is the use of digital tools and technologies. The institution has developed a range of online learning resources, including virtual classrooms and interactive simulations, which enable students to access learning materials and collaborate with peers and teachers from anywhere in the world. This approach has proven particularly effective in engaging students who may not be able to attend traditional classes due to work or other commitments.

By focusing on student-centred learning, partnering with industry, offering experiential learning opportunities, and using digital technologies, Omnia has created a learning environment that prepares students for success in the modern workplace.

- Genuine learning environment - Omnia students build houses at Omnia's own building sites. Future builders, electricians, gardeners, carpenters, and artisans become qualified professionals in a genuine learning environment. All work is monitored by professionals.
- Ongoing project partnerships - Omnia are constantly developing new projects in collaboration with students and representatives of working life in both extensive national and international networks of educational institutions. Omnia's project activities focus on working life orientation, digital solutions, and the development of learning environments. The goal of their project activities is to create effective learning and training together with their project partners. Omnia works in projects both as a coordinator and a project partner.

The Fellow had the opportunity of visiting Omnia's Espoo campus and interact with Tarja Lang, Research Manager and Satu Gripenberg, Quality Manager who provided him with a robust overview of the Finnish VET system. Students at Omnia can transition to HE after completing their VET qualification due to pathways and articulation arrangements with providers such as the University of Helsinki. At least one-third of the overall training is undertaken at the workplace. There is strong emphasis on sustainable development practices at Omnia and this was evident when the Fellow was able to visit and see VET students enrolled in building and construction qualifications building environmentally sustainable buildings as part of their studies. Similarly, the Fellow was able to interact with students enrolled in Horticulture courses involved in the design and build of landscaping projects.



Figure 11. At the Espoo campus of Omnia with Sami Löfgren, Kalle Virta, Tarja Lang and Satu Gripenberg

Meeting and interacting with teachers helped to understand that all teachers at Omnia and across other VET institutes in Finland all come from the industry and continue to have close contacts throughout their training career. They are also referred to as “working life teachers”.

Assessments at Omnia are devised by the institute in close consultation with industry representatives as well as the students themselves with a use of both, formative and summative assessments. Assessments are specifically contextualised by considering the needs of the key stakeholders. There is strong emphasis on holistic assessments and Omnia has institute advisory groups for each program area who liaise with industry on a periodic basis and use the information obtained to feed into the curriculum and assessments.

The Pedaknow project

The Fellow met with Docent PhD and lecturer at University of Helsinki, Kalle Virta along with Sami Löfgren, Doctoral Researcher and Project Planner at University of Helsinki to obtain further insights into the Pedaknow project. This project which commenced in March 2022 aims to study the competency needs in VET by investigating to what extent educators (i.e., vocational teachers, workplace supervisors and school supervisors) perceive their own understanding of knowledge, skills and attitudes needed in their pedagogical work. The project then studies the extent to which educators believe understanding of those working-life competencies that vocational graduates should in turn understand (for instance social and communication competencies, work-related

attitudes, and problem-solving competencies). And finally, the project examines to what extent vocational educators perceive to support vocational student learning of competencies. This project is focused on obtaining insights as to how VET may respond to labour-market competency needs by supporting teachers, supervisors at school and in the workplace, as well as students.

Fellow's key findings and observations in Finland

According to the Finnish National Agency for Education (2023) as well as statistics obtained from Eurostat (2018), in Finland, 72% of all secondary school students were enrolled in vocational education and training, whereas in OECD countries the corresponding figure was 42%. The high figure in Finland is explained by the number of adult students, whereas in other European countries VET effectively involves training young people for the job market, which means that the average age of students is low.

In Finland, the focus on three core areas when it comes to devising strategies for best student learning outcomes helps determine the attractiveness of VET (Räisänen & Rökköläinen 2013).

a. Key competences

Key competences help students to keep up with the changes in society and working life and are included in all vocational skills requirements and assessment criteria. The key competences for lifelong learning include digital, technological, mathematics, science, sustainable development, and entrepreneurial competence, among others.

b. Personal competence development plan

At the beginning of VET studies, objectives for competence development are recorded in a personal competence development plan for each learner after consultation. An employer or another representative of a workplace also participates in the preparation of the personal competence development plan. The plan includes information on, for example, identification and recognition of prior learning, acquisition of missing skills, demonstrations of competence and of other skills, and the guidance and support needed. The learner can also include units from general upper secondary curriculum, other vocational qualifications, or higher education in their personal competence development plan. The plan is a live document and can be updated whenever necessary during the student's study period.

c. Work-based learning

Work-based learning (WBL) is provided mainly in real work environments (companies). If this is not possible, it can also be organised in school facilities. All learners take part in WBL and any form of WBL (training agreement or apprenticeship training) may be taken by learners in any

qualification program. WBL may be provided during the whole program duration and cover the whole qualification, a module/unit, or a smaller part of the program. The most suitable method for a learner is agreed in the personal competence development plan.

5.2.8 International Business College, Kolding (Denmark)



Figure 12. The Kolding campus of IBC

International Business College (IBC), located in Kolding, Denmark, is a leading vocational college that offers various programs, including business, marketing, and entrepreneurship. IBC’s philosophy is centred on the principle of “learning by doing,” which is why the college has a strong emphasis on industry-based learning outcomes and student engagement (IBC 2023).

IBC has a student-centred approach, and its strategies are designed to help students succeed both academically and professionally. The following are some of the ways in which IBC engages with its students:

- Personalised Learning: IBC has a personalised learning approach where each student receives individualised attention and support from teachers, mentors, and career advisors. This approach ensures that each student’s unique learning needs are met, and they are given the necessary support to achieve their academic and career goals.

- **Interactive Classrooms:** IBC's classrooms are designed to encourage collaboration, creativity, and innovation. Students work in groups, participate in class discussions, and engage in hands-on activities, which helps them learn better.
- **Internships and Work Placements:** IBC encourages students to gain practical experience through internships and work placements. This approach helps students to apply the theoretical concepts learned in the classroom to real-life situations, gain valuable work experience, and build a professional network.

IBC's curriculum is designed to meet the needs of the industry, and its learning outcomes are aligned with the demands of the job market. The following are some of the ways in which IBC incorporates industry-based learning outcomes:

- **Project-Based Learning:** IBC's programs include project-based learning, where students work on real-world projects in collaboration with industry partners. This approach helps students develop skills that are directly applicable to the workplace, such as problem-solving, communication, and teamwork. IBC has partnered with several businesses (for e.g. ALDI Academy in Denmark) and devised training content and assessments as part of this collaboration.
- **Industry Guest Lectures:** IBC invites industry experts to deliver guest lectures, workshops, and seminars to provide students with a real-world perspective on the topics they are learning. This approach helps students to understand the industry's current trends, challenges, and opportunities.
- **Industry Partnerships:** IBC has partnerships with various industries, including business, marketing, and entrepreneurship, which provide students with opportunities to network with industry professionals, attend industry events, and gain insight into the industry's operations.

Fellow's observations and key learnings obtained

The Fellow had an opportunity to visit two campuses of IBC at Kolding along with Michael Christiansen, COO – Head of International Business and view first-hand how VET courses in disciplines such as Business and Commerce were being delivered. Those few students that were not employed or did not have access to an organisation could utilise 'Learning Labs' where access to documents and organisational information could be sourced.

IBC had a very specific approach to the development of assessments which involved the clear participation of industry since each student had assessments contextualised to their specific needs based on consultation with their employers. These assessment tasks were strongly related to the student's role within the organisation as well as specific to a skillset and / or problem that the organisation needed a solution for. These assessments were aligned to the course requirements and included learning checkpoints along the way. The final assessment would be in the form of a

presentation by the student that would be jointly evaluated by the organisation's representative and IBC's assessor (teacher). The Fellow had the opportunity to interact with a teacher and two students to determine varying stakeholder perspectives on the learning experience. It was determined that there was immense flexibility from a student perspective in terms of ensuring their educational experience was balanced with their employability / work experience and contextualised to the needs of the workplace. It was determined by interacting with the teacher that all current industry practices and relevant trends were incorporated into the curriculum to ensure relevance and appropriateness of the learning program for students.



Figure 13. At the Kolding campus of IBC with left, Keld Høll (Chefkonsulent) and right, Michael Christiansen (COO)



The Danish VET system can best be characterised as a unified VET system based on the dual principle. Although VET programs are offered in several variations in Denmark, building on different legal frameworks, there is no doubt that the main pathway through VET is the dual-based apprenticeship program, with more than 95% of participants in Danish VET involved in this kind of VET program (CEDEFOP 2023).

VET programs organised according to the dual principle alternate between periods of college-based and work-based learning (apprenticeship training) in enterprises. A typical initial VET program (EUD) lasts 3.5 years with a 2:1 split between workplace- and institute- based training, although there is considerable variation among programs. Individual study plans are compiled for all students. Although the VET framework and some aspects of the criteria for the VET curriculum are devised by the Government, it is the VET institutions, industry representatives and social partners who share the responsibility for developing curricula to ensure responsiveness to local labour market needs. A detailed conversation with Keld Høll (Chefkonsulent) helped determine that

as a representative of IBC at the Industry Network, he would engage with industry representatives twice a year to obtain feedback on current trends impacting the industry and any changes that needed to be reflected in the curriculum. This assists hugely in adapting the curriculum to meet any rapidly evolving industry practices especially considering the recent pandemic.

5.2.9 National Office of VET and AL (NSZFH), Budapest (Hungary)

The National Office of Vocational Education and Training and Adult Learning (NSZFH) is an institution controlled by the Ministry for Innovation and Technology. Its key focus is to ensure the successful implementation of the new Hungarian VET and AL Strategy (VET 4.0) with particular emphasis on the three core pillars.

- **Attractive environment:** Creation of quality buildings, teaching rooms, training workshops, sports and recreational spaces which represent a real and attractive option for young people and their parents before choosing a career.
- **Career opportunity:** VET lays the foundation for flexible and predictable career opportunities both for young people and adults. Providing students with a competitive qualification and knowledge required by the industry sector can assist students with gainful employment, which in turn can provide secure livelihood and high income for them. After the final vocational examination, students receive a significant number of extra credit points depending on the result of it, which provides a direct path to the same higher education study field.
- **Teachers and instructors with up-to-date knowledge:** Operating a high-quality VET system requires committed and well-prepared teachers. It is of paramount importance in VET that teachers and instructors teaching vocational theory and practice have up-to-date knowledge of the industry / sector's current practices and technological requirements.



Figure 14. At NSZFH Budapest with Veronika Leiner, Eszter Karvázy, Ferenc Szeghy, Márton Károly Bacsó, Tímea Czeglédi and Sándor Fehér

A visit to the headquarters of NSZFH in Budapest was facilitated by Eszter Karvázy, head of NSZFH's international unit who, along with her colleague Veronika Leiner project coordinator, provided a comprehensive overview of the VET system in Hungary. This was followed by an opportunity to meet and interact with some key stakeholders from the VET sector that included representatives from VET institutes as well as from the industry. Ferenc Szeghy, deputy principal and Márton Károly Bacsó, teacher from the Than Károly Ecoschool provided some examples of how they undertook substantive discussion with industry representatives when it comes to delivering the curriculum. These include organising visits for students, creating partnerships for internships as well as obtaining current industry-specific information that could feed into the content delivery. Sándor Fehér and Tímea Czeglédi from Szentinel Kft, a security firm that collaborates with VET schools then provided an industry perspective on how they seek information pertaining to the curriculum to ensure that they could provide practical aspects of those to students as part of their internship sessions. With the recent introduction of dual training in Hungary, there is a marked involvement of industry's influence within the VET sector and a substantial increase in the number of students participating in dual training (refer to appendix 5). All of these initiatives from the various stakeholders are solidly aligned to the three pillars of the VET 4.0 strategy.

Besides, Eszter Karvázy also provided detailed information on some major projects undertaken by NSZFH (refer to appendix 6).

5.2.10 Than Károly Ecoschool, Budapest (Hungary)

Than Károly Ecoschool, located in Budapest, Hungary, is a leading vocational education provider whose approach is based on a strong commitment to sustainability, innovation, and social responsibility, and has a reputation for producing graduates who are well-prepared for the modern workforce (Than Karoly Eco School and Technical College 2023).

One of the strategies employed by Than Károly Ecoschool is to work with a range of industry partners across various disciplines within the VET sector. These include government organisations such as Central Danube Valley Water Directorate and Police Directorate of Erzsébetváros as well as private organisations such as Gedeon Richter Plc. and Szentinel Vagyonvédelmi Kft.



A visit to their campus provided an opportunity to see in practice the implementation of the VET 4.0 system that creates an attractive learning environment and provides career opportunities for students while assisting with advancing the professional work of instructors with up-to-date knowledge. Szeghy Ferenc (Dy. Principal) provided some insightful information on how partnership with industry representatives allows students to have an understanding of real-world industry challenges, areas of skills requirements, opportunities to interact with industry representatives and thus be better prepared to meet the needs of the industry after graduation.

Fellow's observations and key learnings obtained

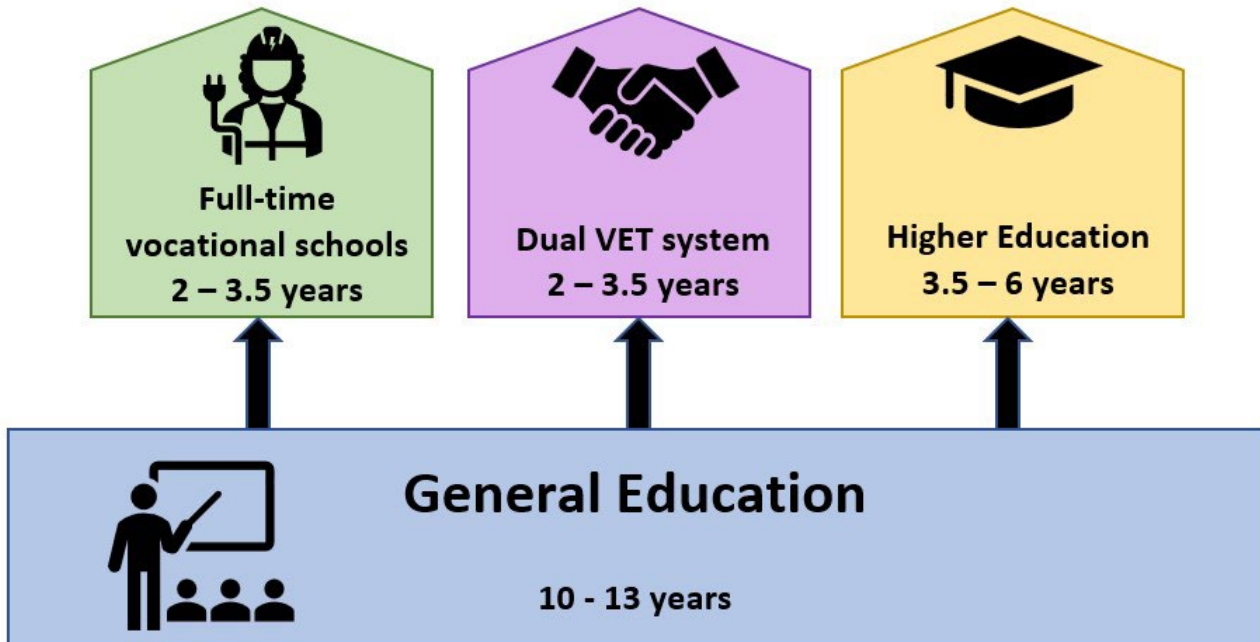
The Hungarian Vocational Education and Training (VET) system is a comprehensive framework designed to provide students with practical skills and knowledge to enter the workforce. It is a vital component of the country's education system, offering a range of vocational programs and pathways for students aged 14 and above.

The Hungarian VET system consists of two main types of vocational schools: vocational secondary schools and vocational training centres (CEDEFOP 2023). Vocational secondary schools offer a combination of general education subjects and vocational training, while vocational training centres focus primarily on practical skills and on-the-job training. The curriculum is designed to provide a balance between theoretical knowledge and hands-on experience, ensuring that students develop both technical skills and a solid understanding of their chosen field, which encompasses a wide range of vocational programs, including engineering, healthcare, business, information technology, agriculture, and hospitality.

The VET system in Hungary also emphasises work-based learning, allowing students to gain practical experience through internships and apprenticeships with partner companies. This close collaboration with the industry ensures that students are well-prepared for the demands of the job market and have opportunities for seamless transition into employment after graduation.

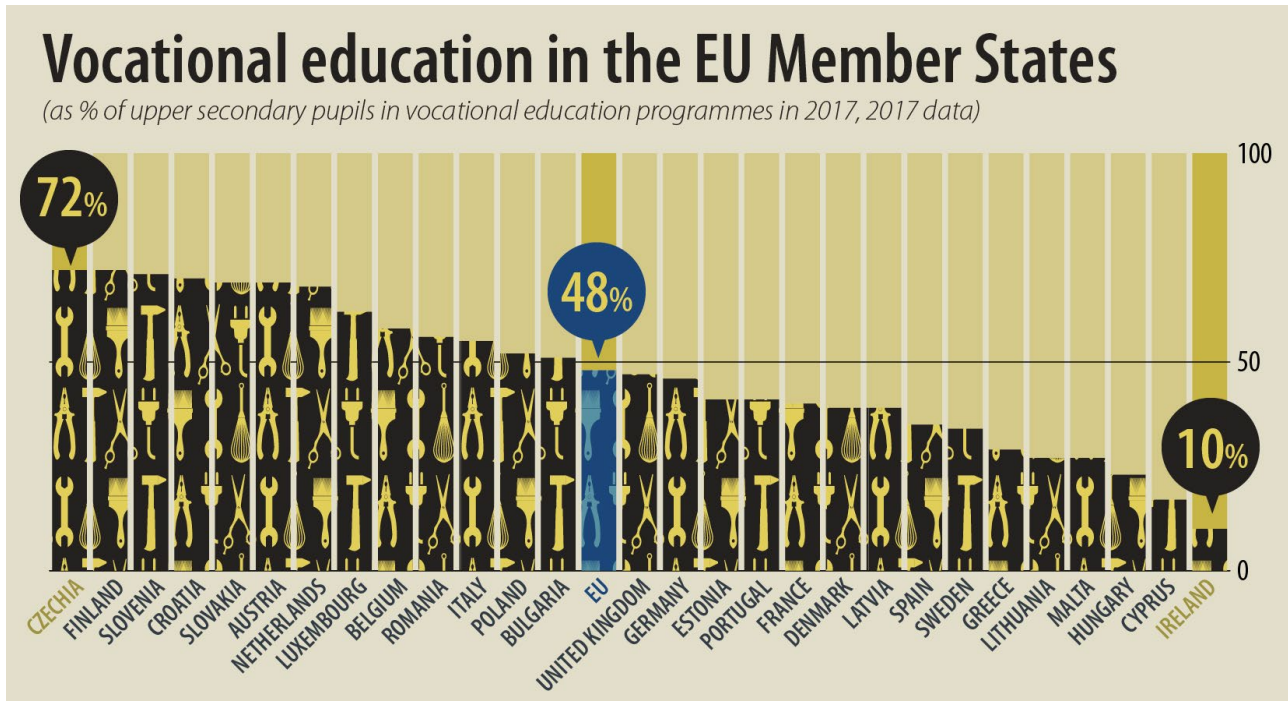
5.2.11 The Dual VET system in Europe

The Dual system of vocational education and training is a widely practised model in several European countries, notably in Germany, Finland, Switzerland, Denmark, and Sweden. This system combines school-based education with workplace-based learning to provide students with both theoretical and practical skills, preparing them for specific vocational roles in industries.



The Dual system operates on the principle of cooperation between employers and vocational schools. The vocational schools provide students with theoretical education in various fields, while the employers offer practical training in their respective workplaces. This system aims to provide students with practical, hands-on experience while simultaneously acquiring theoretical knowledge in a classroom setting.

In this system, students usually attend vocational schools for one or two days a week, while the remaining days are spent working as apprentices in a company. The employers provide students with practical training and offer them an opportunity to gain hands-on experience in their respective fields. The practical training is structured, with students receiving an increasing level of responsibility as they progress through their apprenticeship. Dual VET is governed by a contract, follows a full learning cycle for a registered occupation and leads to a recognised qualification.



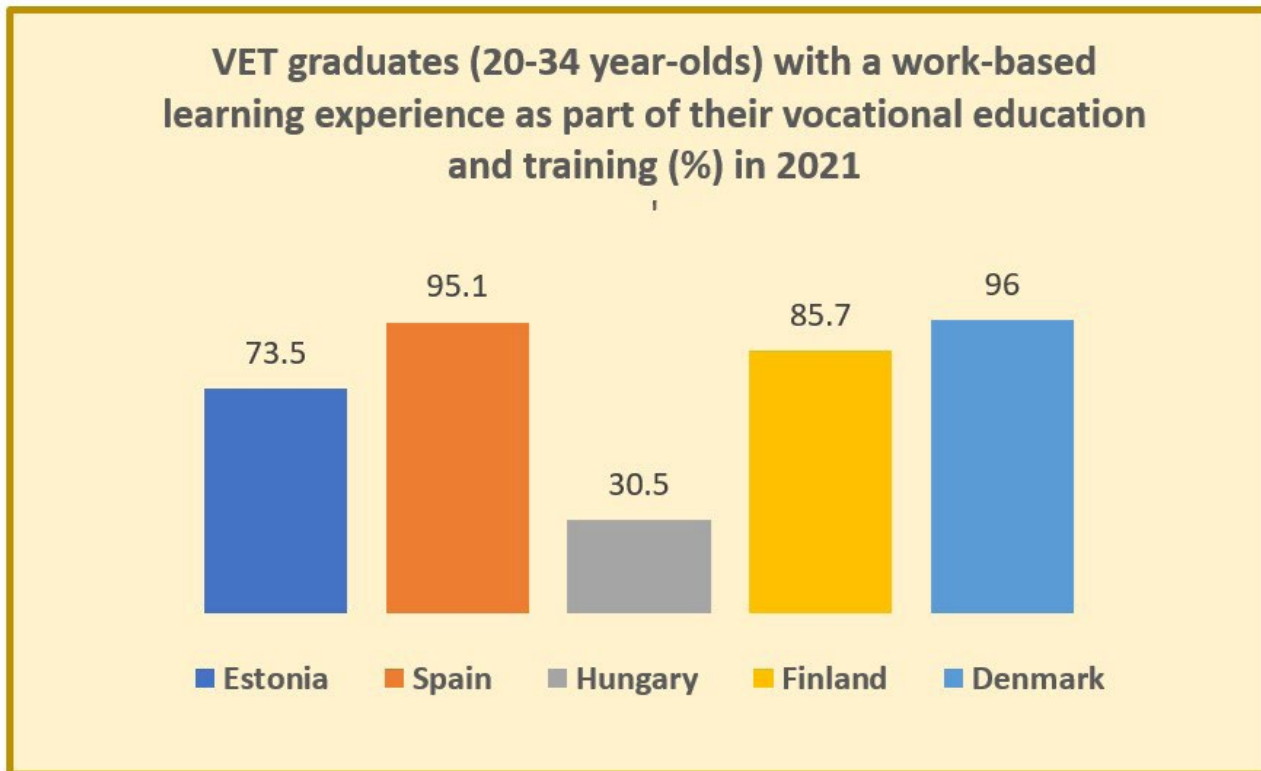
ec.europa.eu/eurostat

Source: Eurostat (2023)

The Dual system offers several advantages to both students and employers. For students, it offers the opportunity to acquire practical skills and industry-specific knowledge while earning a salary. Students can also apply theoretical knowledge to practical situations, thereby enhancing their understanding of the subject matter. This system offers students an excellent chance of employment upon graduation, as they will have practical experience and industry connections.

Employers, on the other hand, benefit from the Dual system in various ways. They can shape and mould young people according to their needs and specifications. The companies are provided with a pool of potential employees with practical experience in their specific field. The Dual system allows companies to invest in their future workforce, thereby ensuring the availability of skilled labour and contributing to the economic development of their country.

The Dual system has a strong focus on apprenticeships, which are formal, structured, and recognised training programs that provide students with practical experience and industry-specific knowledge. Apprenticeships are recognised by employers and academic institutions and can lead to professional certification or recognition. The Dual system also places an emphasis on the importance of certification and qualifications, as they are key to professional development and upward mobility.



Source: CEDEFOP (2023)

The Dual system is not without its challenges and requires a high degree of cooperation between vocational institutes and employers, which can at times be difficult to achieve. Employers need to invest in apprenticeships, which can be costly, and some employers may not have the capacity to offer apprenticeships. Additionally, the system can be rigid, limiting opportunities for students who may wish to switch between vocational areas. However, as it has several advantages, including providing students with practical experience and industry connections, and allowing companies to invest in their future workforce, it remains a popular model for vocational education and training in Europe.

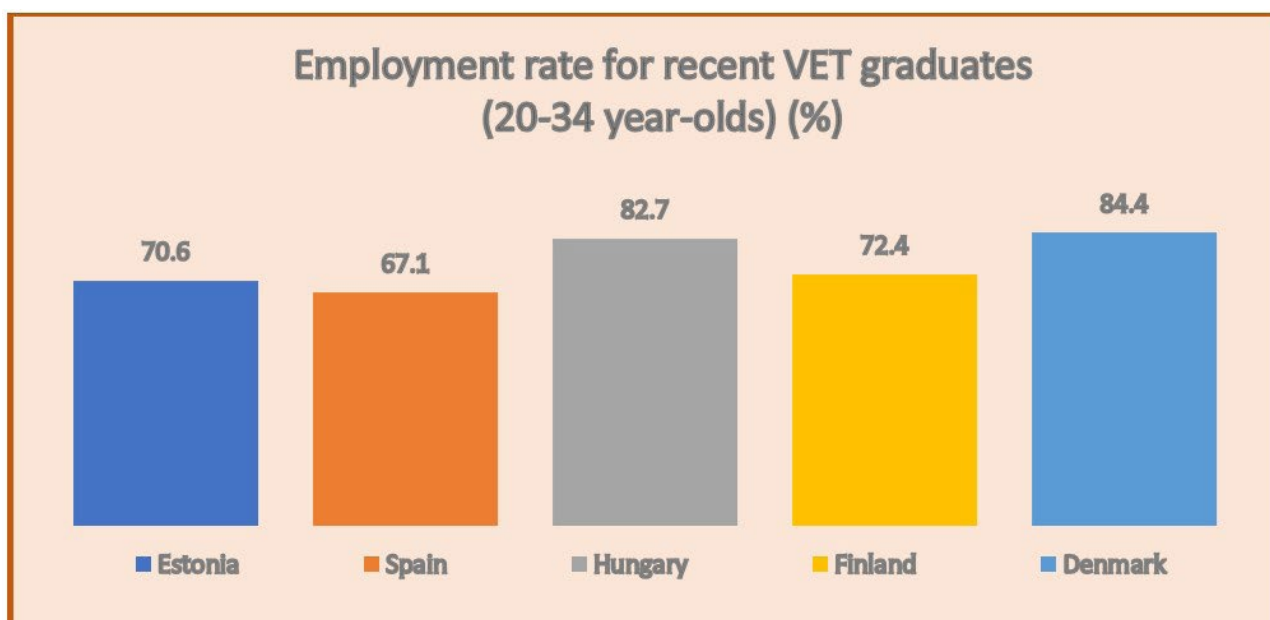
5. Summary of findings

Country	Organisation	Findings and observations
Spain	RMIT Europe, Barcelona	Discussions around IPOL (Industry Partnered Online Learning) and Riipen (industry collaboration platform) undertaken to ascertain how industry requirements can be utilised to find solutions in the form of student projects.
	Mondragón University, Mondragón	An overview of the VET system in Catalonia and how industry inputs feature in the development of curriculum.
	Fundació BCN Formació Professional, Barcelona	An overview of the VET system in Spain and an overview of the some of the VET projects being undertaken using Erasmus and other funding sources.
	La Salle Gracia, Barcelona	An opportunity to see VET in action at a private institute along with obtaining perspectives from a coordinator, trainer, and students on their experiences.
Estonia	Tallinn University, Tallinn	An overview of the SD4X project undertaken by the University of Tallinn that involved industry. Discussions with members of the University on how collaboration between the university and industry is undertaken through research initiatives.
Finland	Omnia, Espoo	A visit to the Espoo campus of Omnia and observe industry-driven learning outcomes being practised by students in a variety of courses including horticulture and construction. An opportunity to discuss the VET framework in Finland as well as practices followed by Omnia around curriculum development, collaboration with industry and development of assessments.
Denmark	International Business College, Kolding	A visit to the Kolding campus of IBC and meetings undertaken with a program coordinator, industry liaison representative, teacher, and students – all with a view to understand the involvement of industry in the development of curriculum and assessments.
Hungary	National Office of VET and AL (NSZFH), Budapest	An understanding of the Hungarian VET framework as well as an overview of the projects being undertaken by NSZFH as part of UNEVOC. Discussions with industry partners from the security industry around their participation in the development of curriculum for VET qualifications.
	Than Károly Ecoschool, Budapest	An opportunity to see VET in action at a member school of the Budapest Technical Vocational Centre along with obtaining perspectives from trainer and students on their experiences.

6. Compare, contrast, and evaluate – Dual VET in Europe and the Australian Apprenticeship system

While a comparison between the entire European VET sector against the Australian VET system may not be appropriate due to the disparity in VET policies among some of the European nations, this section will try and focus on those key areas where the European sector (at least in some countries) has strategies, policies, frameworks, and collaborations that are advantageous to the learning cohort and benefit both industry as well as institutes.

Although the number of students being part of this system varies across each country of Europe, this is a model that is now being adopted rapidly across most European countries and growing rapidly. Spain and Hungary have recently transitioned to this model (with 20% or more VET students enrolled in the Dual system) while countries such as Germany, Sweden, Finland, and Denmark (with 60% to 80% of students in the Dual system) have had this as an integral part of their VET system for years (CEDEFOP 2023).



Source: CEDEFOP (2023)

A comparison of Dual VET to traditional VET in Catalonia, Spain showed that the labour insertion of the Dual system graduates was higher (70%) than the average of traditional VET graduates (50%), and it also allowed for a higher salary level among graduates (Toni et al., 2022). In addition, firms

identified many advantages of employing graduates from Dual VET rather than other graduates, mainly because the apprentices were a better fit for the firm, and they had better professional competencies. As Bentolila (2019) reported, from a review of different European countries, the benefits of Dual VET are particularly important for students who completed Dual training compared to post-compulsory secondary education qualification.

Apprenticeship is a formal training arrangement that combines training and employment and leads to nationally recognised qualifications in the Australian VET system. An apprentice enters into a contract of training or training agreement with an employer, which imposes mutual obligations on both parties. In essence, this is very similar to the European Dual system. However, the number of apprentices in Australia is substantially lower than those undertaking similar vocational education in Europe.



Source: VOCSTATS,
<http://www.ncver.edu.au/resources/vocstats.html>,
 'Apprentices and trainees'
 extracted on 14/04/2023

As per latest statistics obtained from NCVER's database, VOCSTATS (2023) there were approximately 4.3 million students enrolled in VET programs across Australia, of which approximately 400,000 were apprentices. This translates to less than 10% of students undertaking study as apprentices and compares quite unfavourably with the high rate of uptake for the Dual system. Statistics obtained from VOCED (2023) indicated that 43.3% of students who were unemployed before undertaking a VET qualification found employment subsequently. However, 91.8% of apprentices got employment upon completion of their qualifications, which is more than twice the figure for non-apprentices, showing massive advantages for the apprenticeship model. This statistic though, compares very favourably (and even higher in several instances) with some of Europe's highest-ranking countries such as Denmark and Hungary.

7. SWOT Analysis

A brief analysis of the strengths, weakness, opportunities, and threats associated with the Fellow's findings are provided here.

- Increased student satisfaction with relevance of assessments and better prepared VET graduates entering the workforce
- Industry-relevant outcomes to address key skills shortages

Strengths



- Some recommendations may be unable to be implemented due to regulatory barriers
- Communicating the findings/recommendations could be restrictive

Weaknesses



- Circumvention of some of the key requirements specified in a unit of competency could occur in trying to fit an existing industry-problem as a potential assessment
- Too much reliance on industry to provide context / content for assessments

Threats



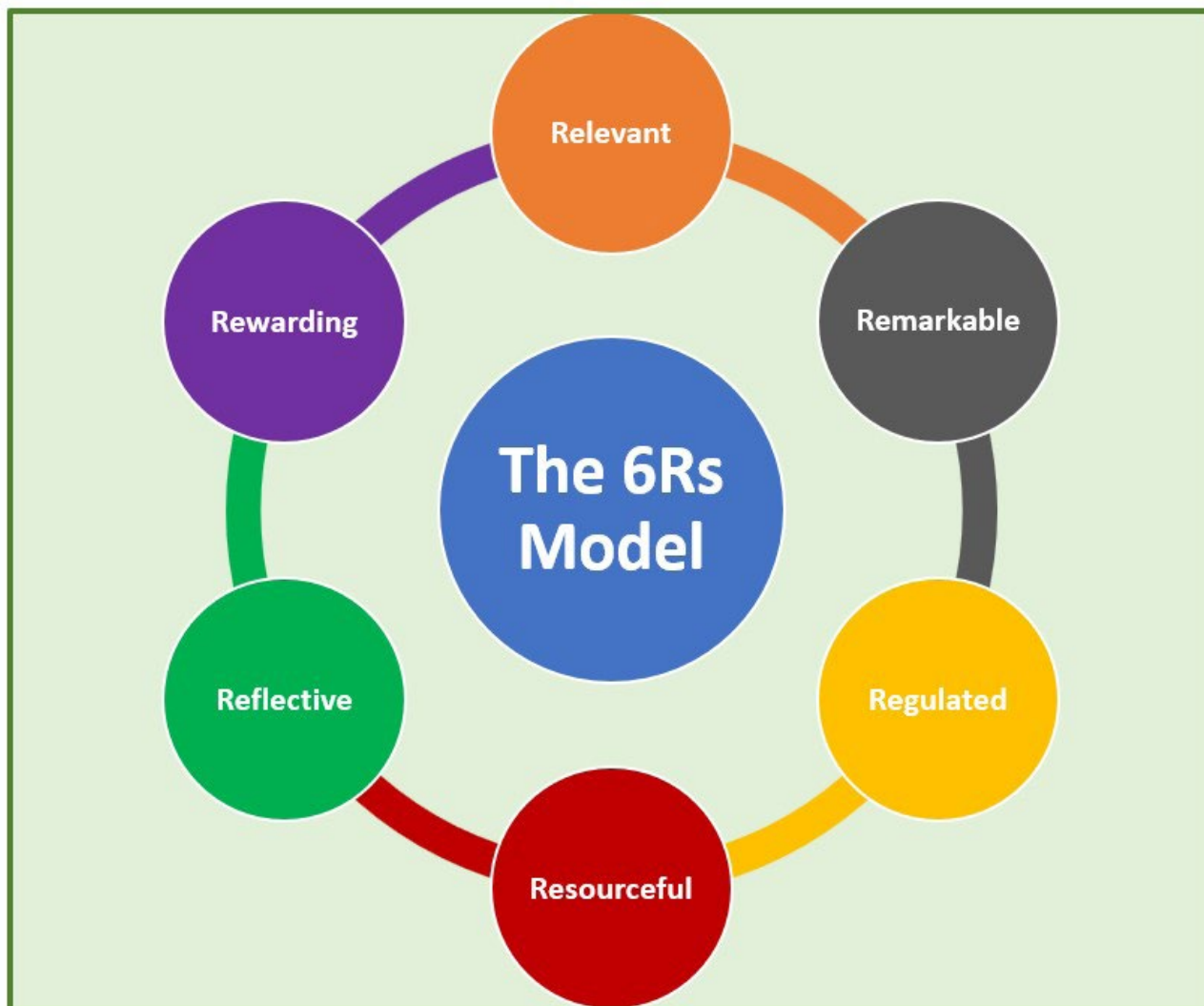
- Assessments having the potential for ongoing use even after students complete their studies
- Assessments serving as solutions to real-life industry problems

Opportunities



8. The 6Rs Model

The key considerations that need to be made when designing assessments includes the following six factors, which have been presented by the Fellow as the 6Rs Model.



Source: Iyer (2022)

Relevant

Assessments need to be appropriate to the learning cohort as well as industry needs. They need to be suitable for the purposes of enabling sound competency-based decisions. And it is important to ensure that the assessments are current to industry needs and provide relevance in a workplace context.

Remarkable

One way to ensure that assessments do not come across as a chore to students and maximise their engagement is to make them relatable. If students can see themselves performing the same tasks at work, there is a greater sense of motivation for them to perform the assessments to high standards. Using some radical approaches to assessments such as incorporating technology, undertaking primary research, creating a real-life solution, or interacting with a real client should also be considered to make assessments remarkable for the student cohort.

Regulated

It is important to ensure that assessments are reviewed on a periodic basis so that they continue to be current and relevant to the student cohort as well as industry needs. They also need to be validated against the unit of competency so that they meet all regulatory and compliance requirements.

Resourceful

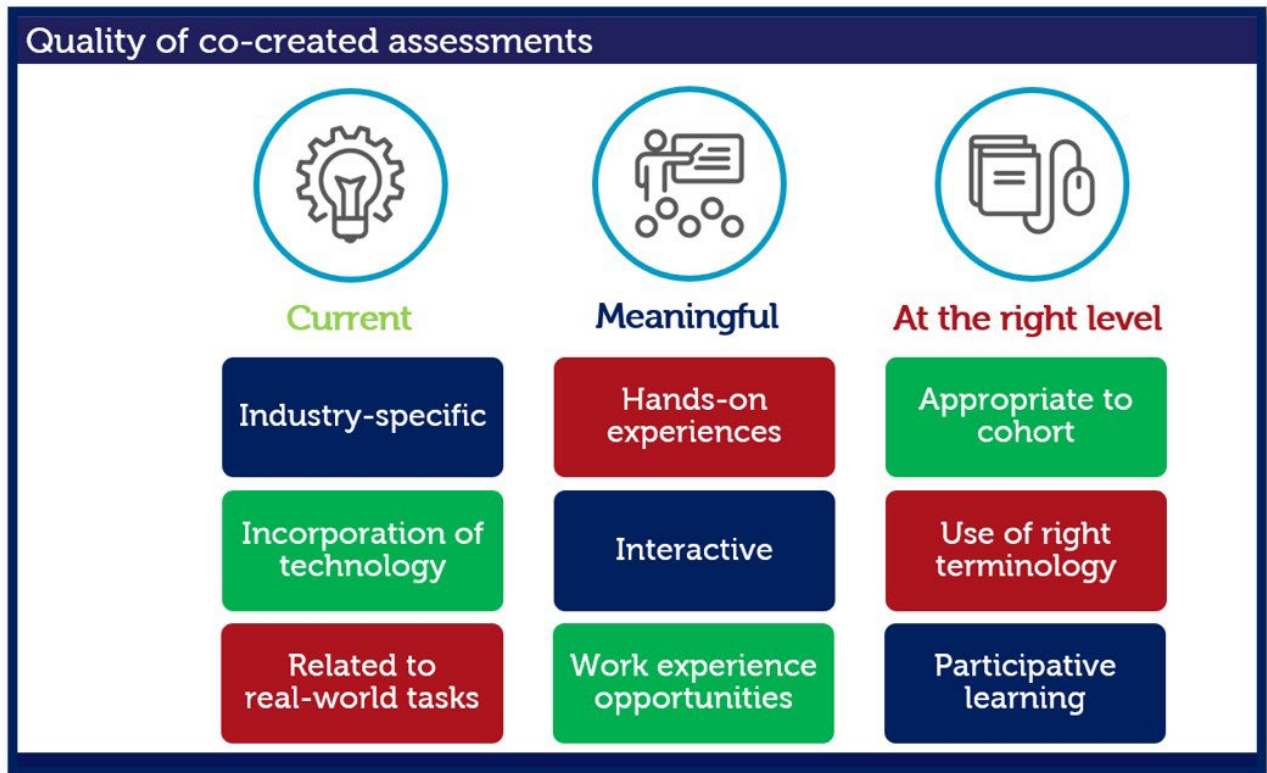
Assessments should provide students with an opportunity to be imaginative in their approach and creative in their presentation. Providing flexibility around use of technological tools and platforms to present their assessment-related findings could be encouraged. Besides, getting students to create assessment pieces that have ongoing use even after completing their studies, or serve as testimony to their skills could provide a huge incentive for successful undertaking.

Reflective

Ideally, assessments should be designed to ensure students have an opportunity to contemplate their work and base it on the current environmental factors affecting their industry. Students should be able to reason their assessment piece through justified discussions as well as supporting research.

Rewarding

Assessments should provide the student cohort with a sense of accomplishment. While most assessments do fulfil that purpose, they mostly tend to be from the perspective of having gained a satisfactory outcome for that task or for having a competency outcome for the unit undertaken. Instead, if the sense of accomplishment was based on having undertaken a highly purposeful task that was future purposed in terms of utilising the outcomes, then it would be a truly rewarding experience for students.



Source: Iyer (2022)

The benefits of using the 6Rs model in conjunction with industry to co-create assessments can result in:

- Relevant and industry-specific assessments
- Competency decisions based on realistic tasks
- Experiential knowledge and performance tasks associated with employment
- The potential to increase industry-readiness and reduce skills gaps
- Exploring further, current, and emerging trends within the industry

9. Recommendations and considerations

a. Including industry consultation for assessments in the TAS

By including industry consultation in the training and assessment strategy (TAS), vocational education providers can ensure that the training and assessment provided is relevant, up-to-date, and aligned with industry needs. This can help to ensure that learners are equipped with the skills and knowledge required to succeed in the workplace.

- Identify the key industry stakeholders who can provide valuable insights into the skills, knowledge, and competencies required for specific job roles. This may include employers, industry associations, trade unions, and professional bodies.
- Develop a survey or questionnaire that seeks to gather feedback and insights from industry stakeholders on the skills and knowledge required for specific job roles. The survey should be designed to capture both quantitative and qualitative data and should be distributed to a wide range of stakeholders.
- Conduct focus groups with industry stakeholders to explore specific topics in more depth. Focus groups provide an opportunity to gather more detailed and nuanced insights and can help to identify emerging trends and issues.
- Involve industry experts in the design of assessment tasks to ensure that they are relevant and aligned with industry needs. This can help to ensure that learners develop the skills and knowledge required for specific job roles.
- Pilot assessments with industry stakeholders to gather feedback and identify areas for improvement. Piloting assessments can help to ensure that they are effective and relevant to the needs of the industry and learners.
- Establish ongoing relationships with industry stakeholders to ensure that the training and assessments remain relevant and up to date. This may include regular consultations, feedback sessions, and involvement in curriculum development.

b. Providing greater work placement opportunities for VET students

Work placements, either as internships or as traineeships / apprenticeships, can be an essential component of VET programs by providing students with hands-on experience and practical skills in a real-world work environment. The Fellow would recommend either consideration of work placement opportunities to be strongly emphasised as part of the qualification requirements, preferably as a mandate.

Creating greater work placement opportunities in vocational education can assist with

- Developing strong partnerships with local employers: This involves building relationships with local employers who can provide work placement opportunities for students. This can be done

by reaching out to businesses in the community and discussing the benefits of taking on work placement students.

- Integrating work placement into the curriculum: This involves incorporating work placement opportunities into the vocational education curriculum. This can be done by providing students with structured work experience that is relevant to their course of study.
- Offering incentives to employers: This involves providing employers with incentives to take on work placement students. This can be done by offering financial incentives or by providing training and support to employers who take on students.
- Providing students with employability skills training: This involves providing students with training in employability skills such as communication, teamwork, and problem-solving. This can help to prepare students for the workplace and make them more attractive to potential employers.
- Using technology to facilitate work placement: This involves using technology to match students with work placement opportunities. This can be done through online platforms that connect students with employers who are looking for work placement students.

c. Bringing real industry problems into the assessment space

As a result of the meeting and discussions undertaken with Tallulah Forrest at RMIT Europe, the Fellow sees some great potential in using a model such as IPOL that allows use of real-world problems as assessments for students to come up with solutions. Of course, this would mean identifying problems that could be linked to a unit of competency and then applying a robust compliance framework to ensure that it meets the regulatory requirements. This can be challenging at the beginning but once a clear process can be identified and implemented, the benefits can be tremendous. A platform like Riipen can provide some major advantages such as:

- Real-world experience: By connecting students with industry partners who provide real-world projects that students can work on, there is the opportunity to gain practical experience and develop relevant skills that are in demand in the job market.
- Authentic assessments: Projects can be designed to be authentic assessments of students' skills and abilities. This means that students are evaluated on their ability to apply what they have learned in the classroom to real-world situations, providing a more accurate representation of their readiness for the workforce.
- Collaborative learning: Riipen projects are often team-based, which promotes collaborative learning and allows students to work together to solve complex problems. This is an important skill in the workforce, as many jobs require employees to work effectively in teams.
- Industry connections: Through such platforms, students can network with industry professionals

and potentially even secure employment or internships. This can be a valuable resource for students as they transition from their studies to the workforce.

- Data-driven insights: Platforms such as Riipen provide educators with data-driven insights into students' performance on projects, allowing them to make informed decisions about curriculum and instruction. This data can also be used to assess the effectiveness of the vocational education program overall.

Riipen Project Example: Customer Segmentation for Supermarkets

For one of the largest supermarket chains in Australia, students from a major Australian University have built a customer segmentation model that will be used by the supermarket's sales team to segment their fresh produce customers based on behaviour, types of products and amounts of products purchased. This project aims to understand customer behaviour, and therefore help the supermarket plan for future promotions aimed at their target market. A project like this aligns very soundly with a unit of competency such as BSBMKG401 Profile the market where customer segmentation is a key constituent of the competency requirements.

d. Initiating conversations with peak bodies such as the Industry Advisory Groups (IAGs) and the Victorian Skills Authority (VSA)

The VSA is the key link between Victoria's industries, training providers, employers, and communities. It works to match Victoria's employment demands with training, ensure Victorian employers and communities can find workers with the skills they need, and that Victorians can get training that will help them find a job and build a career. In its capacity, the VSA has the potential to assist in creating a collaboration of industry stakeholders. This collaboration could lead to more industry-relevant assessments, enabling vocational education providers to better prepare students for the workforce. Collaborating with industry to develop assessments promotes a more responsive approach to curriculum development. By aligning assessments with industry requirements, the VSA can identify areas where the curriculum needs to be updated or modified to reflect changing industry trends. The Fellow's findings combined with conversations between the key stakeholders can provide insights into industry expectations, emerging skills, and assessment methods, facilitating the development of curricula that address current and future workforce needs. The VSA can use the Fellow's findings to inform the assessment development processes, ensuring that industry needs are met effectively.

By leveraging the knowledge and experience of industry professionals, the VSA can enhance the quality and rigor of assessments. The Fellow's findings can provide guidance on effective collaboration models, strategies for involving industry experts, and best practices for developing high-quality assessments that meet industry standards. Also, by assisting with the implementation of the Fellow's findings, the VSA can promote employer engagement and strengthen the relevance

of vocational education programs. And critically, industry involvement in assessment development brings credibility to vocational education programs. When industry representatives are actively engaged in designing assessments, it validates the relevance and reliability of the assessment process. The findings can help the VSA assist with the establishment of a robust validation framework, ensuring that assessments have industry support and are seen as credible measures of competency.

There are ten IAGs which are as part of the Industry Engagement Framework. The IAGs have a formal role with the VSA which includes collecting advice and insights about skill demands and needs as part of the Government's funded training system. The members of the IAGs include representatives from industry, unions and employers and an opportunity to engage with the IAGs and share the findings of this report can assist with a massive push towards incorporation of industry involvement in assessment development on a more formal basis. Besides, IAGs can contribute significantly towards the adoption of this collaborative process because they assume some extremely key roles.

- **Expertise and guidance:** IAGs can provide expertise and guidance in the development of assessments by sharing their industry-specific knowledge, insights, and expectations. Based on the findings, IAGs can actively participate in the design, review, and validation of assessments to ensure they align with current industry practices and requirements. Their input can contribute to the development of robust and relevant assessment frameworks.
- **Industry validation:** IAGs can serve as a validation mechanism for assessments. By involving industry representatives in the assessment development process, the credibility and validity of assessments can be strengthened. IAGs can review and endorse assessments to confirm their alignment with industry standards, providing assurance to vocational education providers, employers, and learners that the assessments accurately measure the required skills and competencies.
- **Workforce needs identification:** IAGs can help identify emerging trends, skills gaps, and evolving industry needs within their respective sectors. By collaborating with IAGs, vocational education providers can gain valuable insights into the changing demands of the workforce. IAGs can contribute to the identification of new skills, knowledge, and competencies that should be integrated into the assessment frameworks, ensuring that vocational education programs are responsive to industry requirements.
- **Quality assurance:** IAGs can play a role in quality assurance by evaluating the effectiveness and appropriateness of assessments. They can provide feedback on the clarity of assessment criteria, the validity of assessment methods, and the overall quality of assessments. This input

from IAGs can help improve the reliability and consistency of assessments, ensuring they accurately reflect industry expectations and produce reliable outcomes.

- **Industry partnership development:** Through the Fellow's Fellowship findings, IAGs can be encouraged to foster stronger partnerships with vocational education providers. Collaboration in assessment development can be an entry point for deeper engagement between industry and educational institutions. IAGs can actively participate in joint initiatives, such as curriculum development, work-integrated learning opportunities, and apprenticeship programs, which can further strengthen the alignment between vocational education and industry needs.
- **Advocacy and promotion:** IAGs can advocate for the importance of collaboration between industry and vocational education providers in assessment development. They can communicate the value of industry-relevant assessments to other stakeholders, including employers, government agencies, and policymakers. By promoting the benefits of the Fellowship findings, IAGs can create awareness and generate support for the integration of industry expertise into assessment processes.

Involvement of IAG can create the ground for inclusion of industry involvement in assessment development into training packages where there is specific mention within a unit of competency, possibly within the 'Assessment Requirements' section such as 'Assessment Conditions'.

10. Personal, professional and sectoral impact

10.1 Personal Impact

The Fellowship experience has been unique from a personal point of view. These impacts go beyond the professional realm and encompass various aspects of the Fellow's life.

Personal Growth: Engaging in rigorous research and being awarded a Fellowship has boosted the Fellow's self-confidence and belief in his abilities. It validates his intellectual pursuits and encourages him to explore new ideas and concepts. This personal growth has enhanced his overall sense of fulfilment and accomplishment.

Expanded Knowledge and Expertise: The Fellow's research on involving industry in the co-creation of VET assessments required an in-depth understanding of the subject matter. Through his research, he continues to acquire valuable knowledge and expertise in this field. This expanded understanding has contributed to his personal development and intellectual curiosity.

Network Expansion: The Fellowship has provided an opportunity for the Fellow to connect with other researchers, scholars, and professionals in the field thus fostering lifelong connections and personal friendships.

Enhanced Problem-Solving Skills: Undertaking research requires critical thinking, analytical skills, and problem-solving abilities. Through his research journey, the Fellow has developed and refined some of these skills. This can have a positive impact on his personal life, enabling him to approach challenges from a more analytical and strategic perspective.

Increased Confidence in Decision-Making: The research process involves making numerous decisions, ranging from research methodology to data analysis techniques. Successfully navigating these decision-making processes can boost the Fellow's confidence in their ability to make informed choices. This newfound confidence may extend beyond the research realm and positively impact their personal decision-making abilities in various aspects of life.

Sense of Purpose: Undertaking research on a topic of personal interest and passion has provided the Fellow with a profound sense of purpose. The opportunity to contribute to the field and make a meaningful impact has instilled a sense of fulfilment and dedication. This sense of purpose can permeate into other areas of his life, bringing a greater sense of meaning and direction.

Personal Satisfaction: Ultimately, the culmination of the Fellow's research and the positive outcomes achieved through his work brings personal satisfaction. The sense of achievement, the knowledge gained, and the contributions being made to the field are immensely rewarding, fostering a sense of personal fulfilment and contentment.

10.2 Professional impact

The Fellow's own professional development has been enhanced immensely because of the Fellowship research and travel undertaken. The Fellow can confirm with a high degree of confidence that his research topic is unique in that there are no other known instances within Australia of research undertaken on industry collaboration purely from an assessment perspective. This also leads the Fellow to position himself as an expert in a unique area of research, and initiate discussions with a range of stakeholders based on some credible research undertaken, sound practices observed, and a pilot project commenced.

The opportunities to explore international projects and liaise with overseas experts from the VET sector who work closely with industry has provided new insights into the benefits of collaboration, while also opening new ideations. This exposure will be vital in devising new, and more robust assessment strategies and methodologies in the vocational sector, and thus benefit the Fellow's present role as Manager Learning & Teaching Innovation. Attainment of supporting evidence and statistics through the Fellowship journey will be pivotal when discussing assessment approaches both, with SMEs in the VET sector as well as industry representatives.

Some of the major professional impacts on the Fellow are listed here.

Expertise and Knowledge: Engaging in in-depth research on this topic will provide the Fellow with a comprehensive understanding of the dynamics between industry and VET assessments. The Fellow will gain specialised knowledge about the benefits, challenges, and best practices of involving industry in the co-creation process. This expertise will set them apart as a SME in the field.

Professional Recognition: Receiving a Fellowship and conducting research in this area demonstrates the Fellow's dedication to advancing the field of VET assessments. It showcases his commitment to professional growth, research, and innovation. This recognition can lead to increased visibility, respect, and credibility among peers, employers, and stakeholders within the VET sector.

Networking Opportunities: Throughout the research journey, the Fellow will have increased opportunities to collaborate with professionals, industry representatives, and educators who share an interest in the topic. These collaborations can expand the Fellow's professional network, fostering connections that may lead to future research collaborations, speaking engagements, or career opportunities.

Contribution to Policy and Practice: The Fellow's research findings and recommendations can have a significant impact on policy development and practice within the VET sector. By highlighting

the benefits of involving industry in co-creating assessments, the Fellow can contribute to shaping policies, guidelines, and frameworks that enhance the relevance and quality of VET assessments. This can lead to positive changes in curriculum development, industry alignment, and overall educational outcomes.

Career Advancement: The combination of expertise, recognition, networking, and contributions to the field can open doors to various career opportunities for the Fellow. They may be sought after as a consultant, advisor, or expert in organisations involved in VET, such as educational institutions, government agencies, industry associations, or training providers. They may also be considered for leadership positions, research roles, or teaching positions in the VET sector.

Research and Publication Opportunities: Conducting research as a Fellow provides opportunities for publication in academic journals, conference presentations, and reports. Sharing the research findings with a broader audience can contribute to the academic community's knowledge base, further establishing the Fellow's expertise and raising his professional profile.

Enhanced Problem-Solving and Critical Thinking Skills: Engaging in research and analysis related to involving industry in co-creating VET assessments will strengthen the Fellow's problem-solving and critical thinking abilities. He will develop skills in data collection, analysis, interpretation, and drawing evidence-based conclusions. These skills are transferable and valuable in a wide range of professional settings.

Besides, professional development of the Fellow's team of learning designers, assessment writers and curriculum specialists could be immensely aided because of this Fellowship. As this team works closely with educators in the development of resources they could suggest, discuss, and ideate on the best forms of learning and assessments for online, blended and classroom delivery. Besides, the Fellow's team of learning designers also conduct various professional development workshops within the CoVE and could use these forums to also emphasise the importance of collaborating with industry in the assessment development process.

10.3 Sectoral impact

It is important to note that the specific impact of the Fellow's research will depend on various factors, such as some limitations within the scope of this research, the required co-operation from key stakeholders involved, and the dissemination of the findings. However, the potential outcomes mentioned below highlight the positive effects that involving industry in the co-creation of VET assessments can have on the VET sector.

Improved relevance and alignment: Involving industry in the co-creation of VET assessments can ensure that the assessments reflect the current skills and knowledge requirements of the industry. This collaboration can result in assessments that are more relevant, up-to-date, and aligned with industry needs. As a result, VET graduates will be better equipped with the skills and competencies desired by employers, increasing their employability.

Enhanced quality assurance: Industry involvement in the development of VET assessments can contribute to a more robust quality assurance process. Industry experts can provide valuable insights and validation of assessment criteria, ensuring that they accurately measure the desired outcomes. This involvement can lead to more reliable and valid assessments, enhancing the overall quality of VET programs.

Increased industry engagement: Collaborating with industry in the co-creation of assessments fosters stronger partnerships between VET providers and employers. As industry representatives actively participate in assessment development, they become more engaged in the VET system. This engagement can lead to various benefits, such as improved work-integrated learning opportunities, industry-led curriculum development, and increased employer confidence in the VET sector.

Enhanced innovation and agility: Involving industry in the co-creation of VET assessments encourages innovation and agility in the VET sector. Industry professionals bring their practical expertise, current industry trends, and emerging skill requirements to the assessment design process. This input can support the development of assessments that keep pace with rapidly changing industries and technological advancements, ensuring that VET graduates remain competitive in the job market.

Increased research capacity: Undertaking research on involving industry in the co-creation of VET assessments as part of a Fellowship can contribute to the overall research capacity in the VET sector. Research findings and recommendations can inform policy development, influence curriculum design, and guide assessment practices across the sector. This research can also inspire further studies and collaborations, expanding the knowledge base and driving continuous improvement in VET assessment methodologies.

Policy and systemic impact: Fellowship research on involving industry in assessment co-creation can influence policy decisions and systemic changes within the VET sector. By providing evidence-based recommendations, the research can shape government initiatives, funding models, and regulatory frameworks. This impact can help create an enabling environment for sustained industry involvement in the assessment process, fostering long-term collaboration and positive outcomes for VET learners, employers, and providers.

If the proposed pilot of involving industry in the co-creation of assessments is successfully implemented in the Certificate IV in Instrumentation and Control, then the findings can showcase an actual instance of the results of this collaboration process. This pilot can be used to highlight how close collaboration and co-operation between institutes and industry can result in highly meaningful assessments for students and reduce the gaps that industry experiences quite often, in terms of underprepared graduates entering the workforce. The potential for such collaboration could eventually be embedded with the training and assessment strategy (TAS) thus, officially endorsing the practice and leading to a behavioural shift in institute-industry relations.

11. Dissemination through engagement

The Fellow would use the Fellowship research and findings to flow to industry, which can benefit through the proposed co-creation process. As a member of the College of Vocational Education (CoVE) at RMIT University, he would use the opportunity to emphasise the role and importance of industry with industry representatives. He would look to creating a pool of industry experts who can work with SMEs in devising best approaches, methodology and tools within the assessment development and competency determination process.

As the Manager of the Learning & Teaching Innovation team in the CoVE, the Fellow oversees projects around the development of learning resources. A key focus of his team's work is on assessment review (validation), revising of assessments as well as assessment development. These findings can thus also assist his team in developing appropriate skills-testing assessments that can be beneficial to students graduating and entering the workforce. The Fellow also plans to organise PD workshops for teaching staff on devising strategies to work with industry and co-create assessments. The Fellow was able to make three presentations based on information gathered and observations made through the Fellowship research. These presentations include:

- Thought Leadership Series (VET Development Centre), November 2021: Involving industry in the co-creation of VET assessments
- Webinar (VET Development Centre), August 2022: Rejuvenating VET assessments to meet rapidly evolving needs
- ALiVE in Action (Learning & Teaching Conference, RMIT University), December 2022: Assessing with the times

The Fellow would also liaise with industry through some of the networks that he is a member of, thus spreading the potential benefits of co-creation to the wider industry group. The research, findings and suggestions for improvements will be shared with all members to ensure that the assessment process becomes more robust, engaging, and relevant to students as well as the industry.

The Fellow is a member of various vocational education networks in Victoria, including the VET Practitioners' Network (VPN) which is a peak network for TAFE practitioners delivering accredited qualifications in training and assessment. The Network liaises closely with the VET Development Centre, CMM Service Industries and Further Education, the Victorian TAFE Staff Development Network, and the Victorian TAFE Association and provides a forum to RTOs for the sharing of resources and the validation and moderation of assessments. The Fellow has been a member of this network since 2014 and it provides a perfect forum for creating awareness of his research findings and for application of best practices about assessments.

The Fellow is a member of The National RTO Network that provides a space for RTO professionals

from across Australia who are involved in the VET sector to connect with each other. This group enables like-minded people to collaborate and promote active dialogue and is a great network to use as a platform to further the research findings, as well as encourage implementation. The Innovation in Vocational Education and Training is a group for professionals who are involved in innovative processes in the VET sector by sharing best practices, ideas and resources related to innovation in education. It comprises of RTO members as well as industry representatives who are keen to have a say in the VET space. This community also has overseas professionals, thus providing an opportunity to share best practices in assessments on a global forum. The Fellow is also a member of other networks including the Australian VET Leaders and the Victorian Facilitators' Network.

Besides, he is part of the industry advisory panel for the DET funded CIII in Instrumentation and Control project within the CoVE at RMIT University, with a view to obtaining information around industry trends, best practices, and current skills requirements which in turn will inform the development of assessments for two specific units of competency from this qualification.

12. Conclusion

The research undertaken during the Fellowship has shed light on the importance of strong collaboration between industry and vocational education and training (VET) providers in fostering effective student outcomes in the competency decision making space. The observations made in Europe have showcased exemplary models of cooperation that have resulted in successful outcomes for both students and industries. However, in contrast, the Australian VET sector currently faces challenges stemming from limited collaboration between industry and VET providers in the development of assessments, which are the basis of determining student competency outcomes.

As a result of the Fellowship trip to Europe and observations made in institutes across five countries, it was evident that close partnerships between industry and VET providers have played a pivotal role in aligning training programs with the needs of the labour market. This collaboration has allowed for the development of relevant and up-to-date curricula that equip students with the skills and knowledge demanded by employers. Furthermore, these European countries have established mechanisms such as industry advisory boards and work-based learning programs, which bridge the gap between theoretical learning and practical workplace experience. Industry involvement in the setting of realistic workplace-based assessments means that students work towards attaining solutions for real-life problems through the assessment process, thus benefiting all stakeholders. These initiatives have proven instrumental in preparing students for the realities of the job market and facilitating a smooth transition into employment.

Comparatively, the Australian VET sector has struggled to replicate the same level of cooperation seen in Europe. Limited collaboration between industry and VET providers has led to a lack of preparedness of graduates entering the workforce, in terms of the skills acquired by students and the skills demanded by employers. This disparity has had some challenging consequences for both job seekers and industries, as employers often struggle to find suitably qualified and work-ready candidates, while graduates face difficulties in adapting to their employment. Additionally, the lack of industry involvement in assessment design and program evaluation has hindered industry's ability to adapt to rapidly evolving workforce requirements.

To address these challenges, it is imperative that the Australian VET sector prioritises fostering closer ties with industry to ensure that the way an employee would be assessed in the workplace for their competence is also largely replicated in the student's learning journey and assessment process in the classroom. This can be achieved through establishing robust mechanisms for industry engagement, such as industry advisory boards, partnerships, and internship programs. Encouraging collaboration in the assessment methodology identification and assessment development areas between industry representatives and VET providers will ensure that training programs remain relevant, up-to-date, and responsive to labour market needs. Additionally, creating opportunities for work-integrated learning and internships will provide students with valuable real-

world experience and enhance their employability upon graduation. And finally, using platforms such as Riipen and initiatives such as IPOL can provide students with an opportunity to provide solutions for real-life industry problems as part of an assessment process.

By learning from the best practices observed in Europe and implementing similar models of collaboration, the Australian VET sector can strengthen its ability to produce job-ready graduates and support economic growth. A concerted effort must be made by all stakeholders, including government bodies, industry associations, VET providers, and employers, to foster a culture of collaboration and cooperation. Only through such collective action can the Australian VET sector overcome its current limitations and emerge as a robust and responsive system that meets the needs of both students and industry needs.

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14. Appendices

Appendix 1 - Questionnaire

1. Assessments are the basis of making decisions on a student's competency in vocational education. What are inputs / contributions from industry in the assessment development process?
2. Who makes the final competency-based decisions with student assessments in the Dual education system?
3. Who are the key stakeholders consulted / involved in the development of courses / qualifications?
4. What are the different types of delivery models within the vocational education sector? e.g., apprenticeship, etc.
5. Is on-the-job training or work placement a mandatory requirement within vocational education courses?
6. Where are the core skills required as part of any qualification / course listed?
7. What is / are the main reference document/s in the vocational education sector that pertain to the delivery of a course / qualification?
8. How does the skills recognition process work for students who have previous / current industry experience but need a qualification? We call this recognition of prior learning (RPL) in Australia.
9. Is VET Education a potential pathway to Higher Education?

Appendix 2 – IPOL / Riipen presentation

3
Riipen

I How Riipen Works

Marketplace



- World's largest virtual project-based learning library for industry and academia
- Guided experience design and creation tools
- White glove matchmaking between employers and educators (over 95% success rate) to ensure quality

Experience Management & Collaboration



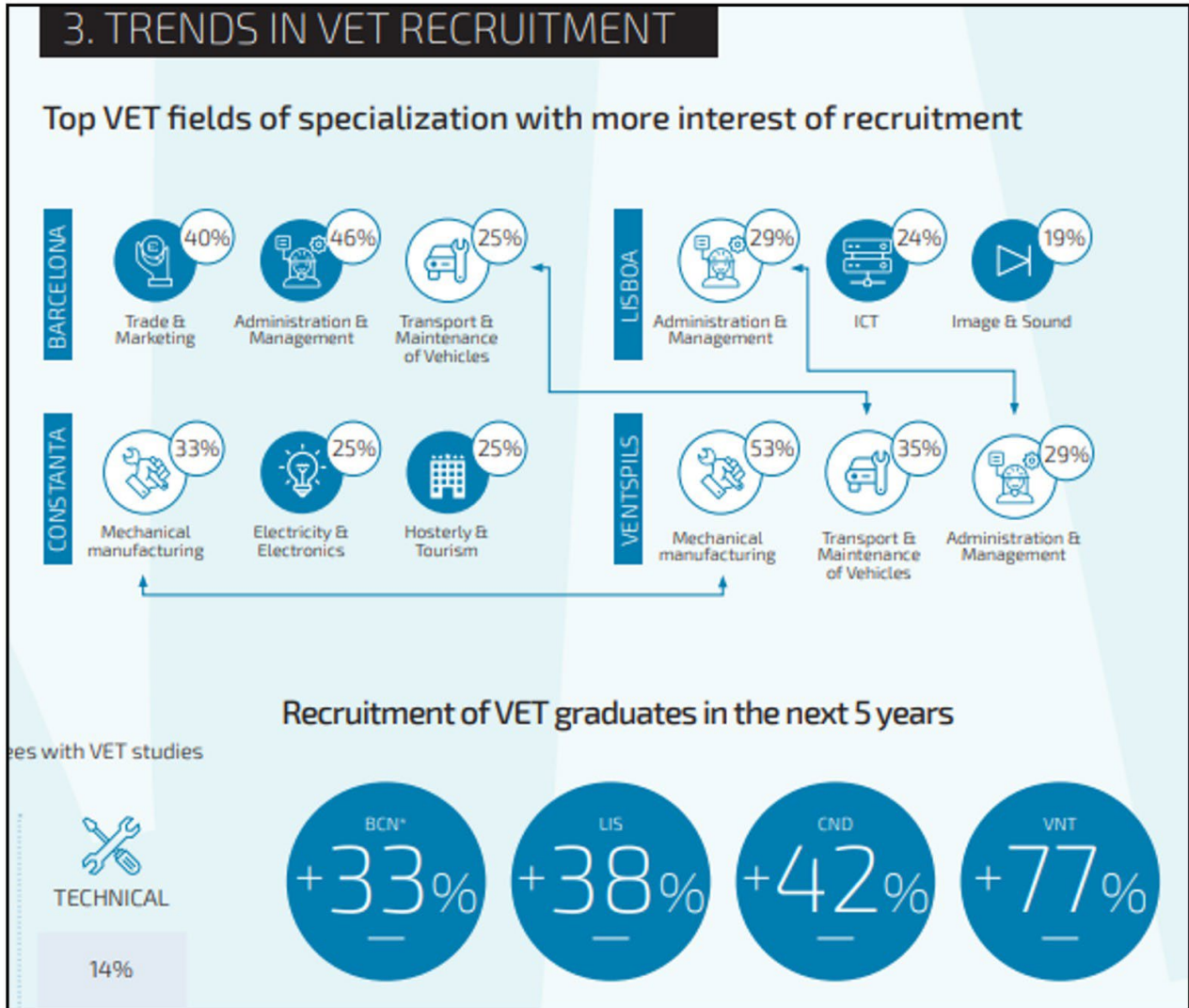
- Project Co-Creation tools for Educators & Industry Partners
- Custom project milestones to ensure engagements deliver successful outcomes
- Learner team management and progress tracking
- In-app messaging, video chat, file sharing.
- Reminders & Notifications

Feedback, Assessment & Reporting

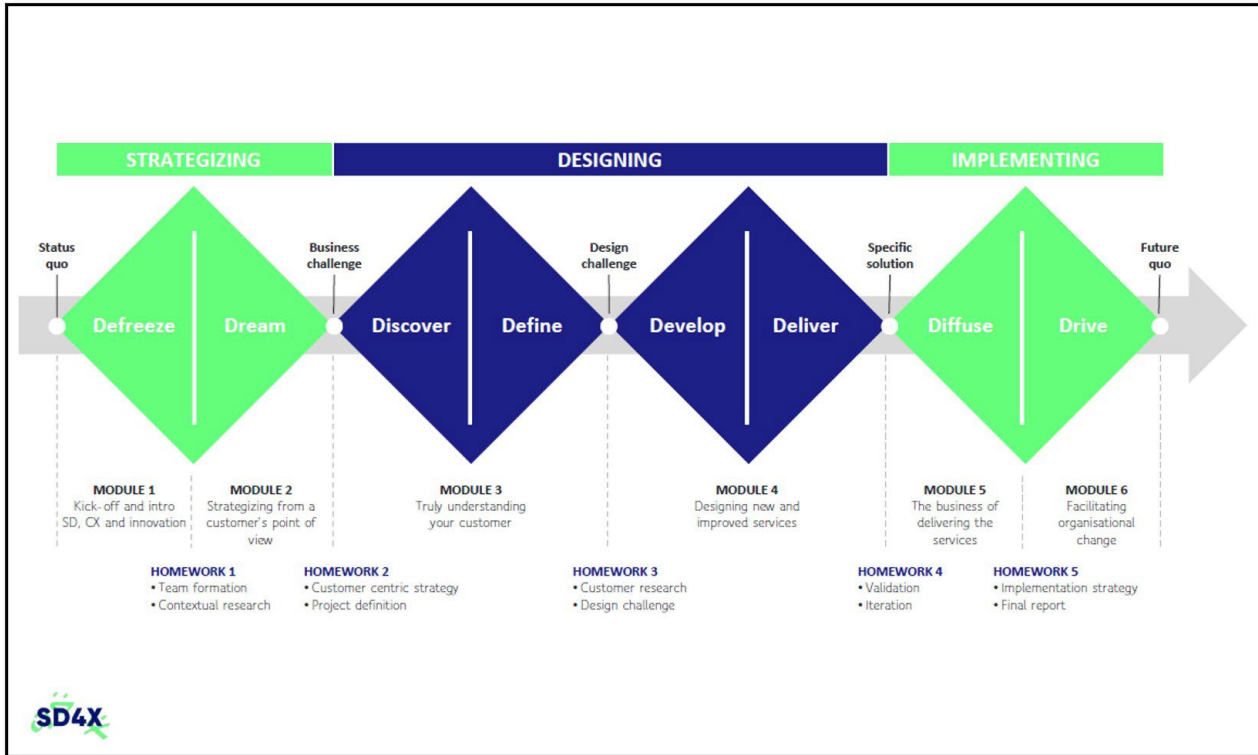


- Employer feedback and skills assessment
- Verified learner skills portfolio of experiences
- Powerful reporting tools to track all activities on campus and total number of learners receiving project-based experiential learning
- Grow and manage network of employer engaging with your learners

Appendix 3 – Trends in VET Recruitment



Appendix 4 – SD4X project overview



Appendix 5 – Dual training in Hungary

Discussed by the Government of Hungary, approved by Government Decree 1168/2019. (III. 28.),

II.7 Current situation of dual training

One of the criteria of effective VET is the participation of companies in the practical training. The Hungarian Chamber of Commerce and Industry and the county economic chambers have played a decisive role in the launch of dual training and its continuous development.

The number of those participating in dual training has increased in the recent period; when evaluating this trend we also need to take into account the fact that the number of those starting a VET programme has been decreasing continuously.

In Hungary today 54.000 students participate in dual vocational training within the framework of upper secondary IVET.



Figure 20: Changes in the number of students participating in dual training 2013–2018
Source: Hungarian Chamber of Commerce and Industry 2018

Dual training is currently present primarily in secondary vocational schools. In the academic year 2017/2018 **48.1%** of the 74.1 thousand persons studying in a **secondary vocational school**—that is 35.6 thousand persons—participated in dual training.

The vocational training tasks of economic chambers

The chambers, as bodies governed by public law, carry out their vocational training tasks delegated by the government based on the provisions of the relevant legislation and defined in the financial support agreement concluded each year, as follows:

- **Operation of an apprenticeship contract advisory network**

The chambers consider as an important task to ensure that the students participate in dual training with an apprenticeship contract, primarily concluded with external economic organizations. For this purpose, the Hungarian Chamber of Commerce and Industry (MKIK) operates an apprenticeship contract advisory network at the territorial chambers, coordinating the task countrywide. The objective is to achieve high-quality dual training and a higher number of apprenticeship contracts. The performance of this task is supported by nearly 150 advisors countrywide.

- **Operation of the national system of level examinations**

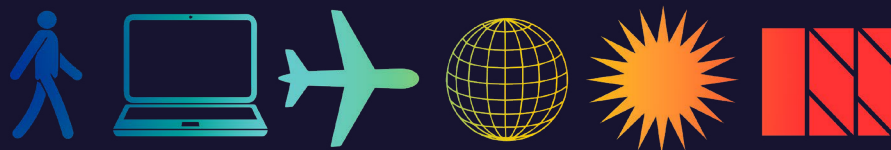
In order to assess whether a student is able to work under governance and is suitable for participating in practical training at economic organizations within the framework of dual training, he/she needs to take a so-called level examination. Level examinations are organized by the territorial chambers together with the school providing the vocational theory, under the coordination of the national chamber. The number of students taking a level examination is about 20,000 persons per year.

- **Supervision of the practical training taking place at economic organizations**

Economic organizations registered by the chamber under an official procedure can participate in dual training. The registration procedure is carried out by rapporteurs in charge of the supervision of training placements at the territorial chambers, under the coordination of the national chamber. The number of registered organizations is almost 9,000.

Appendix 6 – European projects in VET undertaken by NSZFH





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