Enabling VET's applied research capability to support Australia's transformative future

No Frills 2022

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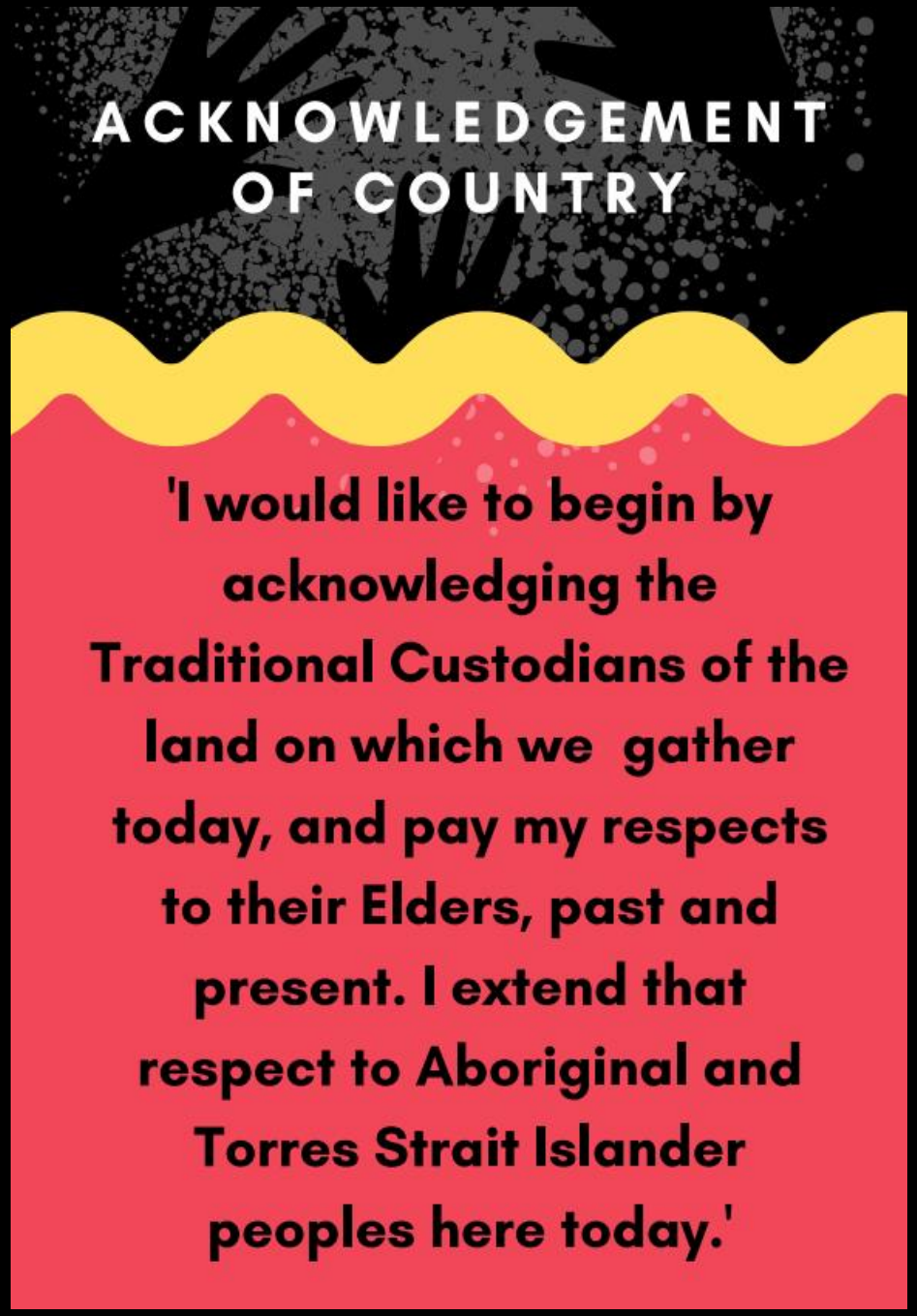

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Who am I?

Allison is a professional learning and business development leader of over 25+ years.
She is the Director and Lead Consultant of Digital Capability, an organisation which specialises in cutting edge online learning and online business solutions.
Allison also leads ePortfolios Australia.

- Allison has:
  - Master of Learning and Development (Organisational Development)
  - Graduate Certificate in Innovation and Entrepreneurship
  - Bachelor of Education (Secondary Business)
  - Diploma of VET, Certificate IV in Training and Assessment
  - Diploma of Business, Certificate IV in Business Administration
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Building on my on-going research

The impact of

'Future of Work'

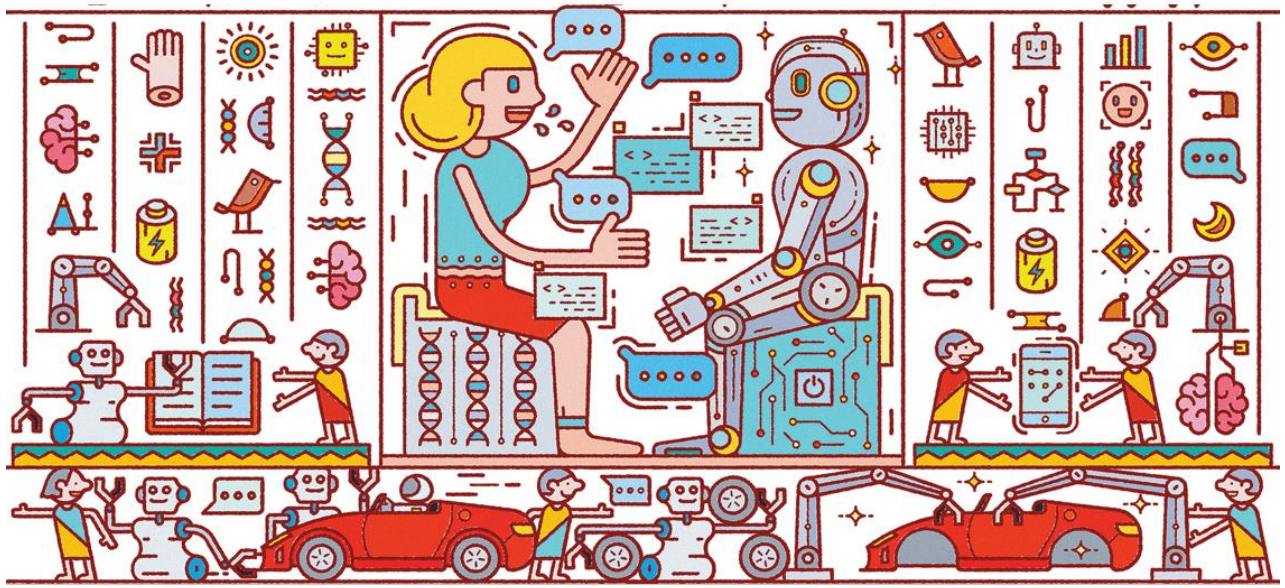
on the VET workforce, especially

trainers' & assessors' digital capability and currency

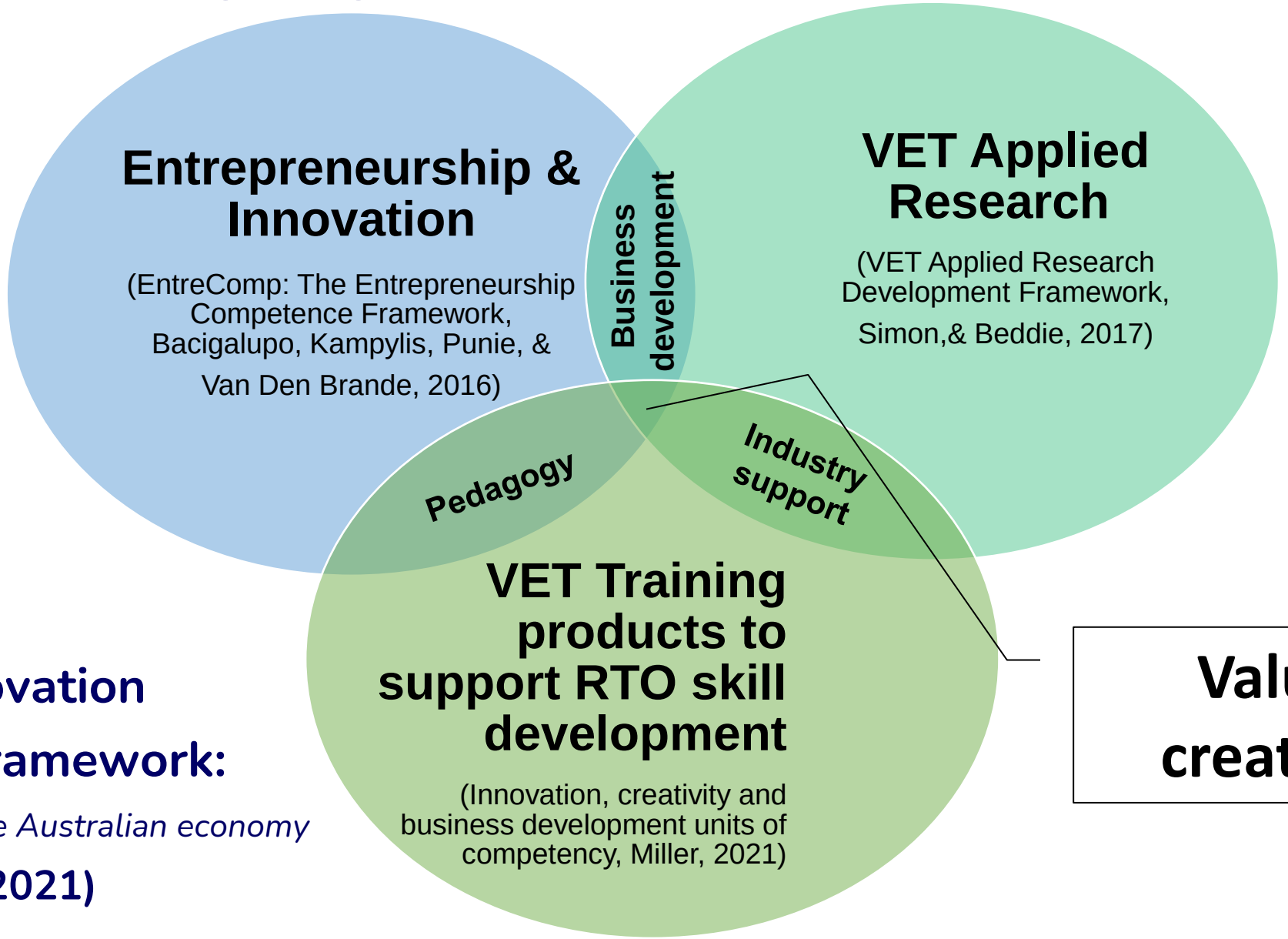
(Miller 2022)

People who can work alongside robots

Wilson & Daugherty (2018)



Building on my on-going research

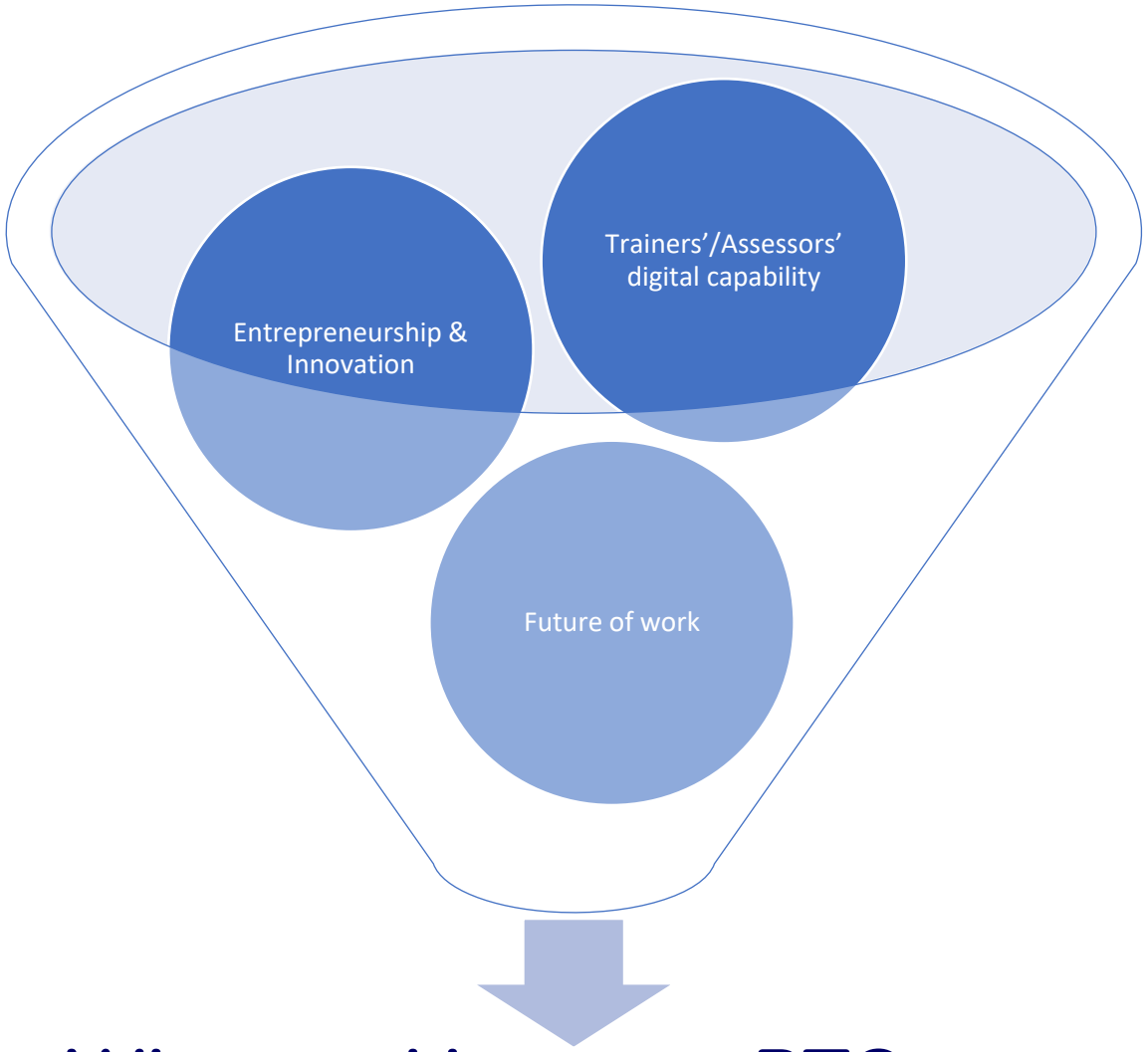


RTO Innovation Capability Framework:

Enabling innovation in the Australian economy

(Miller, 2021)

2022 Research goal:



When and how can RTOs use VET applied research (VAR) to add value?

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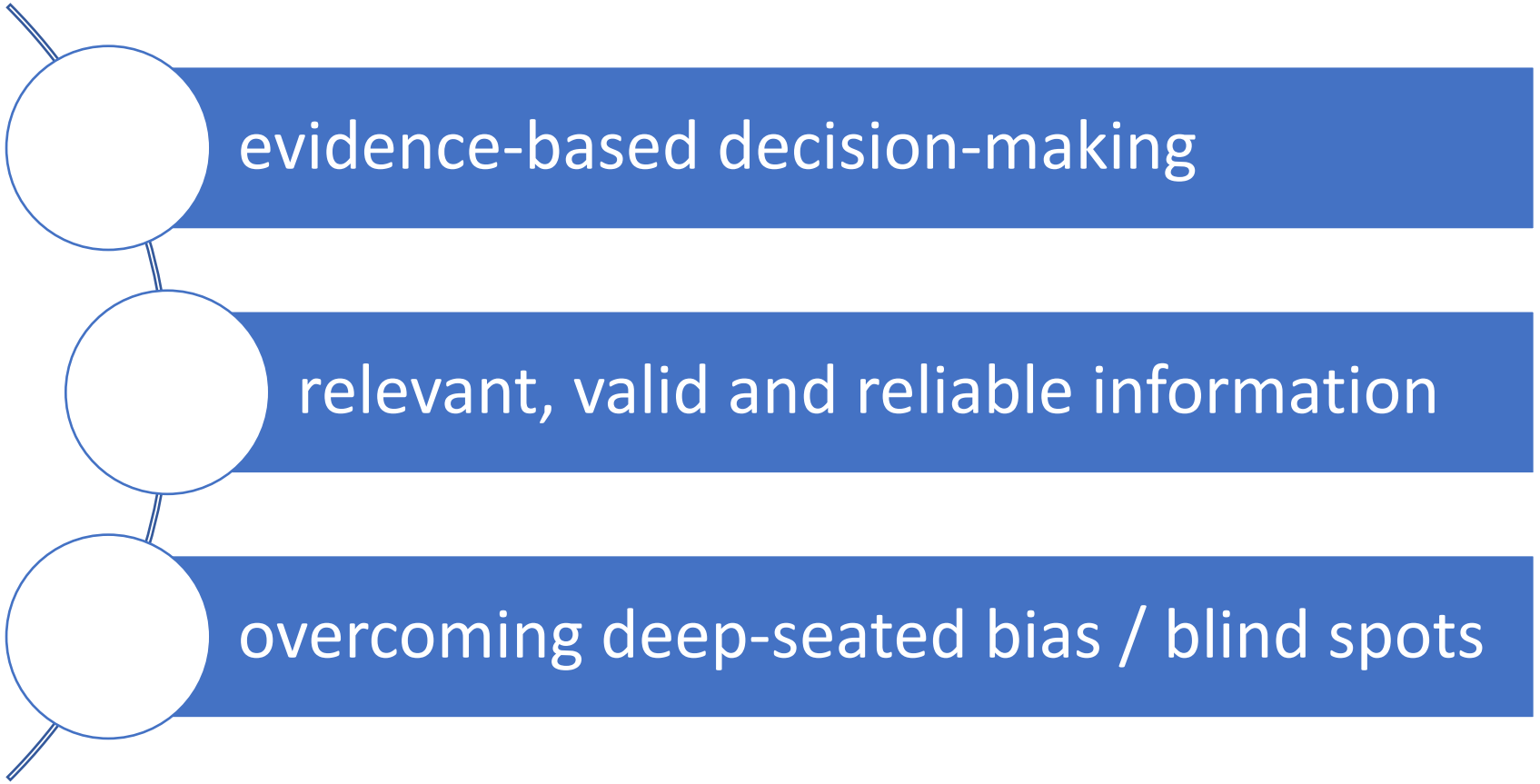
Current, emerging and future skill needs impacting VET sector:

Skill Need Timeline	Australia's Workforce Skill Needs	Digital Capability Needs (Gekara, et al, 2019)
Current *(Now)*	**Health & Information Technology sectors** (National Skills Commission, 2022) *- automation, artificial intelligence, robotics* **Digital and analytics (D'n'A)** (Ellingrud, et al, 2020) - *data mining & management, data analysis* **Working in hybrid workplaces** (Evans, 2021)	Digitally proficiency
Emerging *(3-5 years)*	**By 2026, 9/10 jobs will need a tertiary education** (National Skills Commission, 2022) - *4Cs - Care, Computing, Cognitive ability, Communication* - *virtual reality and augmented reality*	Digitally fluency
Future *(5-10 years)*	**Reform adult-training systems based on Distinct Elements of Talent (DELTAs)** = 56 DELTAs across 13 skill groups and four categories (Dondi, et al, 2021) - *Cognitive, Interpersonal, Self-leadership, Digital* - *technology to support digital social innovation (DSI) (Stocks & Cretu, No date. Vogels et al, 2020)*	Digitally savvy

Rapid change requires rapid solutions (Baimyrzaeva, 2018) **which involves**:



Enter '*Applied Research*'

Applied research:

An **systemic inquiry or examination** into **finding a solution/s to real-world problems** using **sound evidence and thinking**
(Baimyrzaeva, 2018)

Builds upon / tests basic or pure research
(Sarbunan, 2022)

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Types of applied research (Khan, 2021):

Evaluation research

- analyses existing information about a situation to generate objective research findings
  - *eg a study into how others are reducing student attrition*

Research and Development

- develops new products/services for a targeted customer/client group segment
  - *eg research into consumer changes to increase market share*

Action research

- cyclic approach of observe, plan, act and reflect to tackle a specific problem
  - *eg improving training programs to support diverse student needs*

VET Applied Research – Australia (Beddie & Simon, 2017)

BENEFITS FOR DIFFERENT VET STAKEHOLDERS

The overall benefits of an improved applied research capability for different players in the VET system are highlighted below.

Registered training organisations (RTOs)

- Greater evidence base for strategic planning and quality assurance.
- More sophisticated partnerships with industry, the community and other research organisations.
- More employable graduates.
- New income streams.

Educators

- Effective ways to maintain industry currency, improve teaching and develop capabilities and qualifications.
- Opportunities for promotion.
- Job satisfaction.

Students

- Additional capabilities and attributes, such as creative thinking, project management and presentation skills.
- Real-world experience and industry contacts.

Employers

- New research and problem-solving partnerships, sometimes with inexpensive student engagement.
- Mechanisms to allow for risk taking and experimentation that suit the business in terms of cost and timeframes.
- Opportunities for recruitment of a greater diversity of talent.
- Ways to bring new ideas into business operations and commercial endeavours.

System-wide

- Wider dissemination of innovation ideas in the real world and more potential for commercialisation.
- Improved VET graduates, with an innovation mindset.
- Better use of public infrastructure.
- Stronger place-based innovation.

VET Applied Research - Overseas

"VET providers become co-creators of local innovation eco-systems.

They do so by contributing to the generation of new and improved products, services and processes, but also through the supply of skilled, innovative and entrepreneurial VET graduates." (European Union. 2022)

COLLEGES & INSTITUTES CANADA

A diversified expertise

Colleges and institutes from across the country led over **6,400 applied research projects in 2019-2020** in all key sectors of the economy (an increase of 7% over two years). These partnerships involved businesses and community organisations of all sizes, included students who gained innovative work experience, and contributed to environmental sustainability by helping develop clean technologies and sustainable practices.

over 6400 applied research projects

(Colleges and Institutes Canada, No date; VET Development Centre. 2022)

MCAST

The Master in Vocational Education Applied Research 4.0 is a proactive response shifting from the traditional education programmes to innovative practices linking teaching and action research based on the Scholarship of Teaching within the context of vocational education in Further and Higher Education.

(Malta College of Arts, Science and Technology, 2021)

VET Applied Research benefits

Table 2: Benefits for stakeholders of applied research undertaken in Canadian colleges

Benefits for students	Benefits for industry
• Accelerated practical experience to solve technical, scientific, and economic problems • Connections to future employers and jobs • Enhanced program curricula • Strong experiential learning outcomes	• Quick turnaround of practical applied research applications – new or improved products, business processes and models • Access to research and development resources, expertise and equipment that may not be otherwise affordable • Increased sales, new customers, skills development for employees, and access to students with strong experiential learning outcomes as potential employees
Benefits to the Canadian economy	**Benefits to colleges**
• Increased value of companies and improved productivity • Pathway to a post-COVID economy • Resilience in SMEs through sustained innovation and engagement with applied research; better able to adapt to disruption	• Stronger linkages with industry • Experiential learning and jobs for students • Economic development in the community • Enhanced reputation and understanding in the community of their capability • State-of-the-art equipment and facilities

(TAFE Directors Australia, 2020)

Australian VET Applied Research – Industry as partners

Industry › Centre for Applied Research and Innovation

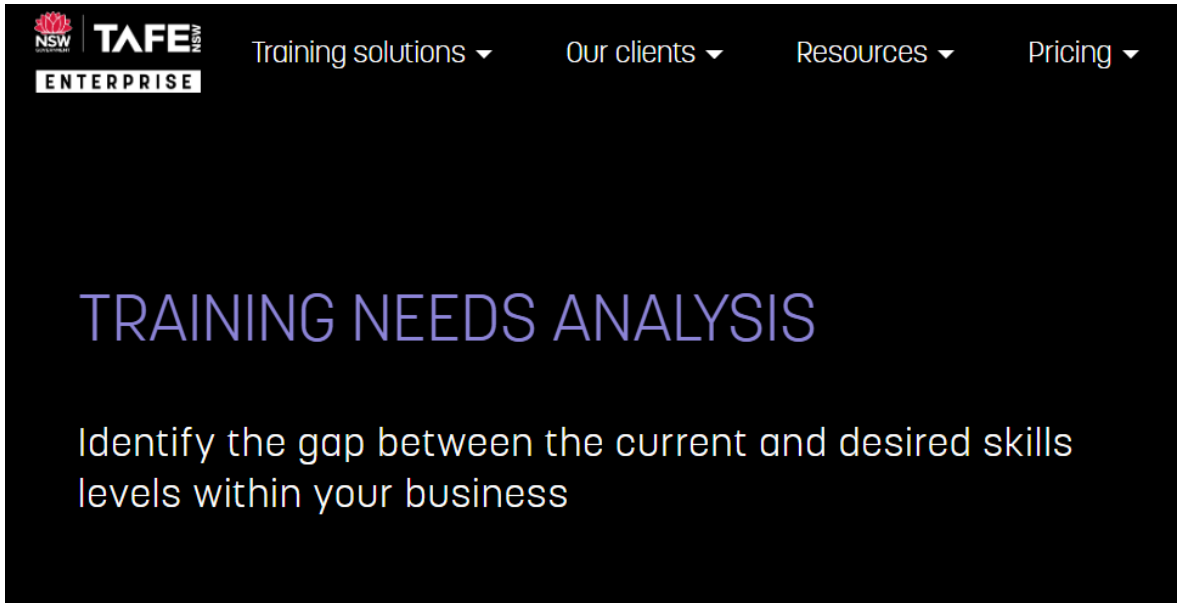
Building 4.0 Co-operative Research Centre (CRC)

Augmented reality and virtual reality resources for the building construction industry

This research project in collaboration with industry researches the development and trial of learning and assessment resources for VET level programs in building construction. It aims to provide a resource to students via the web using augmented reality and virtual reality packages to simulate a range of building construction scenarios.

(Holmsglen's Centre for Applied Research and Innovation, No date)

Australian VET Applied Research – Training Needs Analysis



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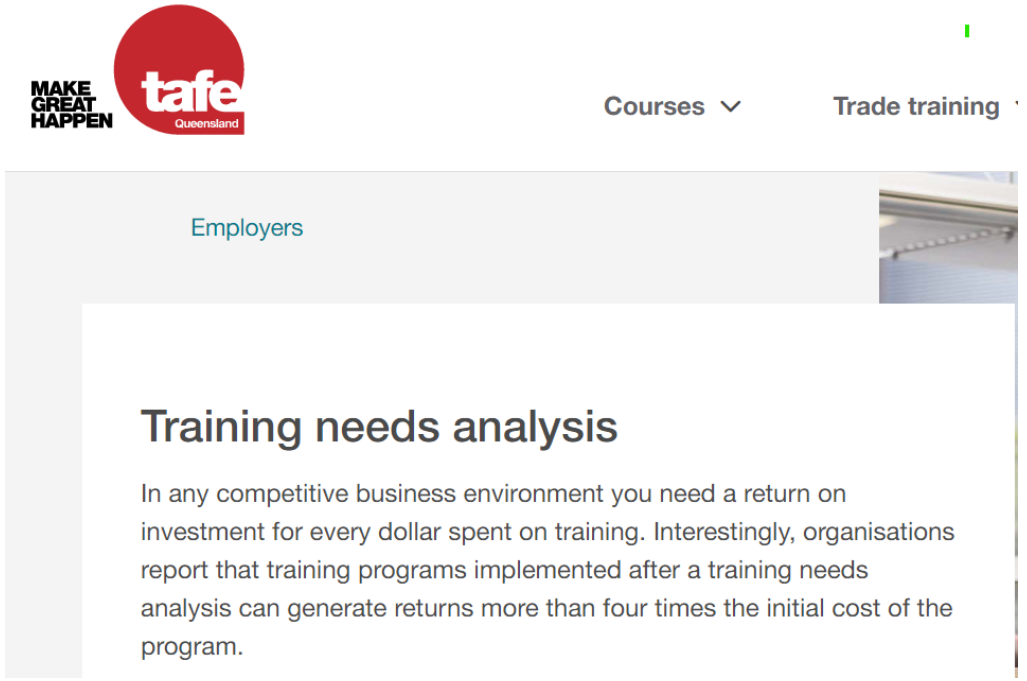


Image from https://tafeqld.edu.au/employers/customised-training-solutions/training-needs-analysis

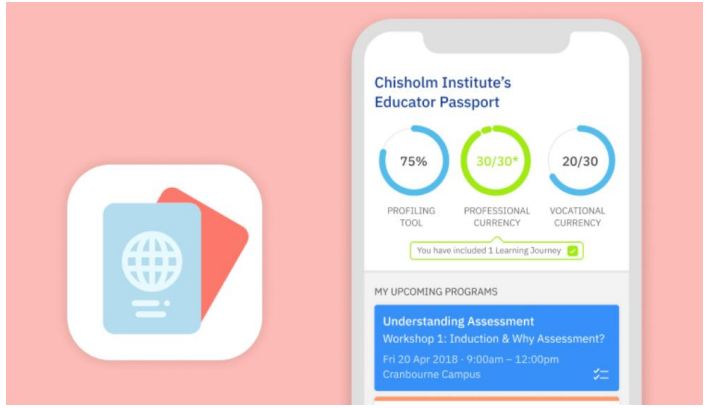
TAETAS501 Undertake training needs analysis

- Collect information and data on current, emerging and future training needs
- Use reliable and valid data analysis methods to determine current and emerging organisational training needs

Australian VET Applied Research – Improve training and assessment

The Professional Educator College (PEC) is a development framework for professional educators developed by Chisholm Institute that builds educator capability through quality professional programs and practices that meet both student and industry needs. The Professional Educator College focuses on achieving sustainable change in educator practice, by providing real and sustainable capability building strategies across the vocational education and training workforce. This

(South West TAFE, 2018)



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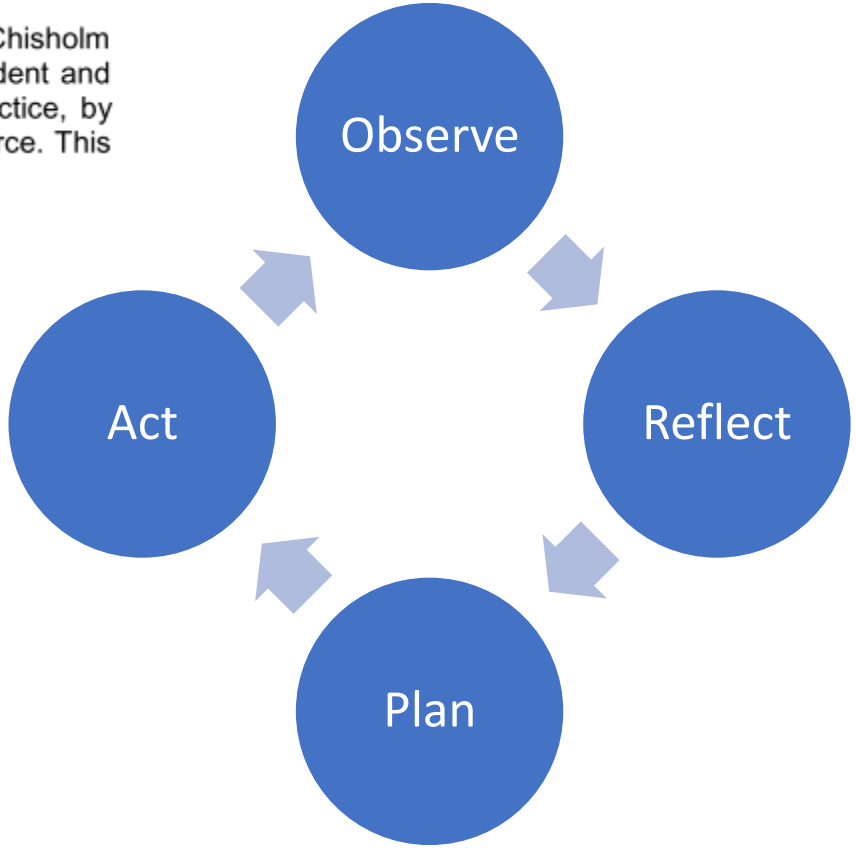


Professional Educator College *Learning Journeys*
Trainer led action-based research

Australian VET Applied Research – Improve training and assessment

TAERES501 - Apply research to training and assessment practice

Application

This unit describes the skills and knowledge required to undertake research into educational theory, and apply this research to improve current training and assessment practice.

It applies to those who need to develop skills in research in order to apply educational theory to improve current and future training, and assessment practice.

TAEDES505 - Evaluate a training program

Application

This unit describes the skills and knowledge required to evaluate a training program, by measuring the effectiveness of training in meeting workforce performance needs and capability requirements.

In a NVR/AQTF context it can contribute to the continuous improvement cycle within a registered training organisation (RTO).

It applies to those who have responsibility for delivery and assessment strategies in the training programs of an organisation.

Images from:
https://training.gov.au/Training/Details/TAERES501
https://training.gov.au/Training/Details/TAEDES505

Australian VET Applied Research – as a pedagogy

(RMIT, 2021)

Australian VET Applied Research – as a pedagogy

Applied Research as a teaching and learning strategy in vocational education and training

Todd Packer
TAFE NSW Sydney Institute

Three Key Attributes for Success

Be forward thinking

Applied research needs to be part of the strategic direction of the organisation

Be informed

Applied research can leverage an existing strength which may be technological, unique facilitates (VR labs, materials labs, 3D printing) or established industry relationships

Be embedded

Research competencies should be scaffolded throughout course levels introducing students early on to the key concepts and skills

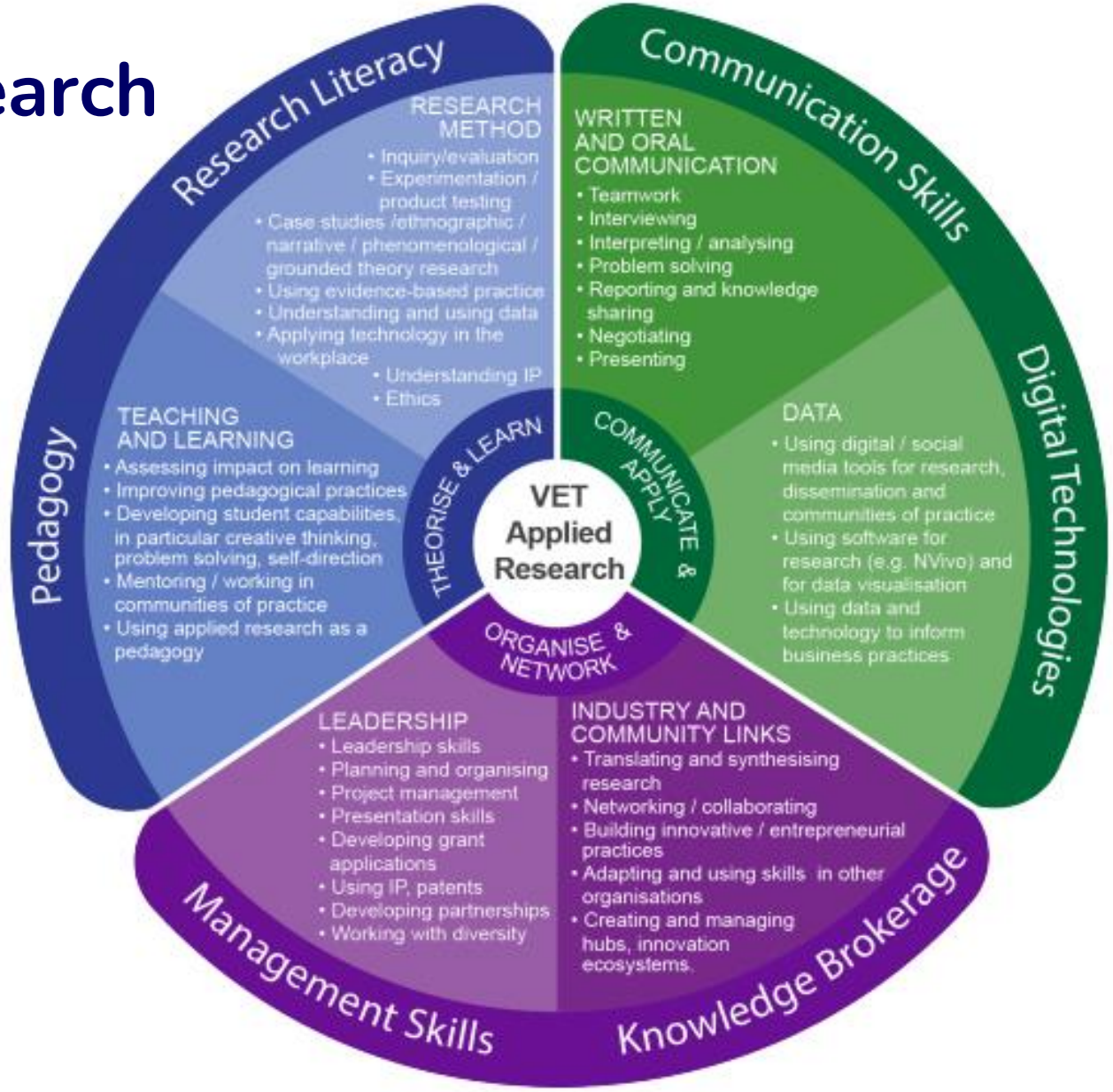
(Parker, No date)

Enabling VET applied research capability

VET Applied Research Developmental Framework

(Simon, L. & Beddie, 2017).

Figure 3 The VET applied research developmental framework



Enabling VET applied research capability

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Work the data

Know your industries, students, employers, trainers
Know what's coming

Getting started with VET applied research

Coopetition with other RTOs

Research Partnerships

R&D Grants

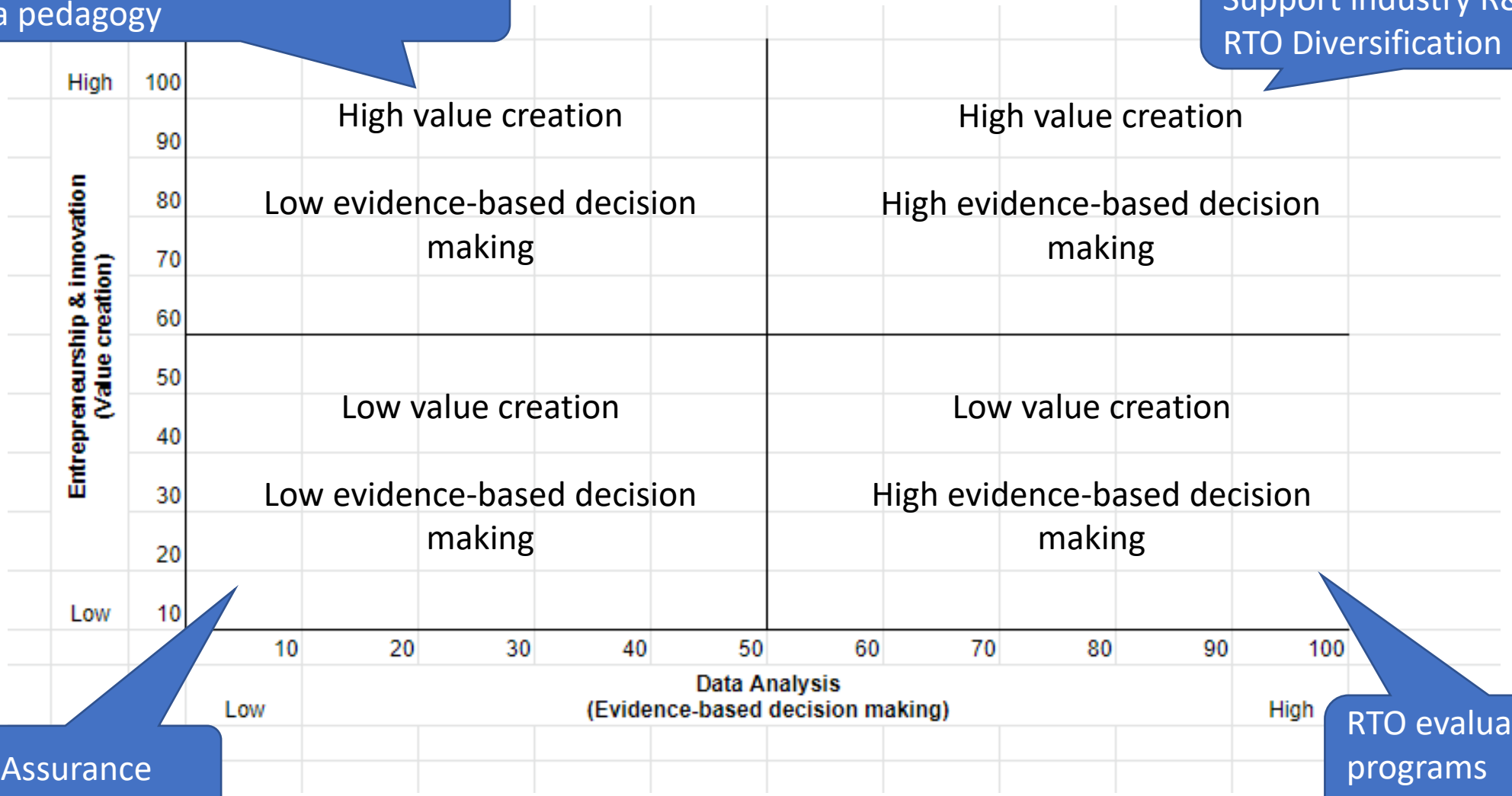
Workforce Development Funding

Co-labs, CoPs, Professional Learning Communities

VET Applied Research (VAR): Where's the value? (Miller, 2022)

RTO improves training and assessment
VAR as a pedagogy

Address industry problems
Support industry R&D
RTO Diversification



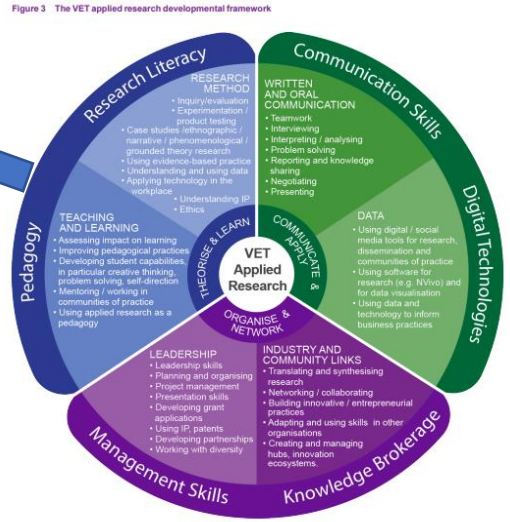
RTO Self-Assurance

RTO evaluates training programs
RTO strategic planning

VET Applied Research (VAR): Where's the value? (Miller, 2022)

VET Applied Research Developmental Framework

(Simon, L. & Beddie, 2017).



VAR to improve, and as a, pedagogy to support current, emerging and future skill needs:

- *4Cs - Care, Computing, Cognitive ability, Communication* (National Skills Commission, 2022)
- *DELTAs - Cognitive, Interpersonal, Self-leadership, Digital* *(Dondi, et al, 2021)*

Questions?

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Let’s connect

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