

Career Education and Skill Acquisition for our Year 10's to Year 12's Re-invented

Pauline Farrell and Sarah Phillips



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QUALITY STANDARD
VET CONFERENCE

Pauline Farrell and Sarah Phillips

Managing Director, Skills 4 the Future and Managing Director, Pop Education

About Pauline:

Pauline is a specialist in learning transformation and learning innovation with twenty plus years in learning strategy specifically around online and blended learning.

Her current major research interests focus on the future of work and how education can evolve to meet the emerging needs of the workforce.

She works globally across the education technology and disruptive technologies. Her focus is on how the process of transformation impacts student retention, student experience and graduates' outcomes.

About Sarah:

Sarah is the Managing Director of Pop Education, an educational design company specialising in Vocational and Higher Education courseware development.

Sarah has been working in the VET industry since 2005 across many different positions within TAFE, private and Learn Local training organisations. She has also been involved with many reputable Higher Education institutions.

Sarah manages and consults to a range of VET and Higher Education projects, specialising in blended and online training and assessment.

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Innovative VETiS



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Transforming Senior Secondary Years

Tech Futures projects

Certificate III in Emerging Technologies and Certificate III in Enabling Technologies



The Victorian Government support of vocational education and its associated pathways is one of the central strategies to increase student retention in year 10 and 11 and improve year 12 or equivalent completion rates. In 2017, provide every student with knowledge, capabilities and attributes to thrive in life, while ensuring the Victorian economy had workers with skills that industry needed and employers expected. In short there is an explicit intent to directly link career education to the learning goals of students from year 9 to 12 and beyond.

Pauline Farrell – Skills 4 the Future



Project Vision and Education Philosophy

Future Vision Evolve the programs towards a scaffolded curriculum approach that embeds micro and macro credentials optimizes flexibility while ensuring all students acquire skills for the future.	Project Aim Transform VETs and TAFE programs from a career specialization to a career exploration focus. Introduce a suite of programs that are holistic and less industry specific. Upskill teachers to confidently deliver. Embed Technical Schools in the solution design. Enable students to pick selections and still achieve a qualification.	Project Structure All courses and units will cover the following key areas: • Enterprise/Human Skills • Technical/Digital Skills • Occupational/Specialist Skills	Students have the right to learn within a positive and engaging learning environment that identifies their strengths and optimizes their capacity to identify their unique skills. The project aims to focus on a co-design methodology partnering industry, educators, technical staff and students to design a program that seeks to disrupt the current education framework.	Students should be provided an opportunity to explore career and future trends to provide them a potential vision of their future that allows them to plan a pathway across and through the education sector and workplace. The program needs to provide opportunities for students to co-design and co-lead their own learning and ultimately career journey with a strong scaffold to support them and optimize success.
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Our Project Partners

- Holmesglen Institute
- The Gordon Institute

TAFE VICTORIA

holmesglen

the Gordon

- 74 industry subject matter experts
- 8 small Victorian businesses

 Skills 4 the Future

 CITT

 GRACON

 FOP EDUCATION



Project Structure

Project Stages

Project Management

Research

Curriculum

Learning Management System

Resource Design and Development

Simulation

Professional development

Pilot

Continuous Improvement and Evaluation

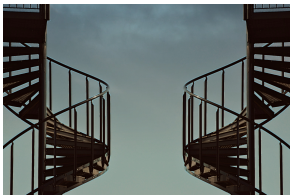


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Research Outcomes



Less than 70% studied a relevant cognate

Less than 10% completion rates

Australia more broadly needs higher digital literacy

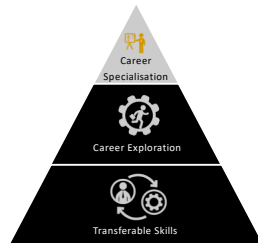
COVID exponentially has driven tech transformation e.g. health

Over 60% of our students are unsure what they want to do

Biggest skill shortage

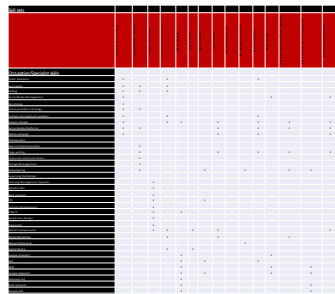
Overarching Learning Architecture

- Explore potential careers
- Build transferable skills
- Build skills sets and micro credentials that they can build on over their career



Career Specialisation and Job Outcomes

- High level of transferable skills mapped globally
- Skills that can pivot across jobs, careers and industries
- Opportunity to develop multiple skill sets useful to small to medium enterprise i.e help desk, social media, website development and cyber security
- Ability to re-use skills supporting students ability to pivot roles i.e data analytics
- Opportunity to explore multiple careers while building skills



Certificate III in Emerging Technologies

Rationale

Both qualifications had a strong broad-based program with innovative delivery and inherent transferability of skills with clear job outcomes

Why it is a solution

- Students exit with industry relevant broad skill base
- Allows career exploration across priority industries
- Transferable skills are embedded to meet jobs of the future and capacity for students to pivot jobs between careers and industries

Human/Enterprise and Digital/Technical Skills

Unit Number	Unit Description
CHCECE001	Contribute to the health and safety of self and others
CHCECE002	Develop enterprise skills for solving workplace challenges (Problem solving, Critical thinking, Customer Service and Creativity)
CHCECE003	Apply enterprise skills to improve outcomes in the workplace (Communication, Financial literacy, Teamwork, Digital literacy, Entrepreneurship)
CHCECE004	Design and work in the application of technologies in industry (Future Technologies Career unit)
CHCECE005	Support Technology - Information skills
CHCECE006	Reduce information to support decision making using common business applications
CHCECE007	Explore and apply skills required for future technologies

Speciality Streams

Speciality Stream	Speciality Stream
Digital and Interactive games	3D Printing
Digital Content design	Wearable objects and coding
Specialist Help Desk	Extension of Edge
Web Development	Emerging Technologies including smart cities, block chain and AI
Data Analytics	
Digital Skills for small business	
Establishing a small business	
Design Thinking & New Product Design	
Future Trade	
Telehealth Administration	
Social Media	

Certificate III in Enabling Technologies

Rationale

Both qualifications had a strong broad-based program with innovative delivery and inherent transferability of skills with clear job outcomes

Why it is a solution

- Students exit with industry relevant broad skill base
- Can be delivered in partnership with Tech Schools
- Allows career exploration across priority industries
- Transferable skills are embedded to meet jobs of the future and capacity for students to pivot jobs between careers and industries

Human/Enterprise and Digital/Technical Skills

CSC Number	Human/Enterprise - Transferable skills
CSC11111	Contribute to the health and safety of self and others
CSC11112	Develop enterprise skills for solving workplace challenges (Problem Solving, Critical Thinking, Customer Service and Creativity)
CSC11113	Apply enterprise skills to implement solutions in the workplace (Communication, Financial Literacy, Teamwork, Digital Literacy, Resilience)
CSC11114	Engage work in the application of technologies in industry (Future Technology Career Unit)

CSC Number	Digital/Technical - Transferable skills
CSC11115	Access information to support decisions making using common business applications
CSC11116	Explore and apply skills required for future technologies

Speciality Streams

Elective Streams	Shared Specialty Streams
Technicians of the Future	Robotics
Networking	3D Printing
Cyber Security	Wearable objects and coding
Hardware Technician	Internet of Things
Communications Systems	Emerging Technologies including smart cities, block chain and AI
Wireless Generations	
Cloud Computing	
Internet of Things	
Industry 4.0	

Microcredentials framework - 50 life skills

Human Skills	Enterprise Skills	Digital and Technical Skills	Career Exploration Micro credentials
Leadership	Problem solving	Digital Literacy	Artificial Intelligence
Planning	Communication	Baseline Microsoft office skills	Coding and programming skills
Critical Thinking	Financial Literacy	Working virtually	IoT
Innovation	Critical thinking	Cloud Computing	Smart Cities
Active learning	Creativity	Artificial Intelligence	Block Chain
Attention to detail	Team work	Analytical Reasoning	Robotics
Emotional Intelligence/ resilience	Presentation	Coding and programming skills	Wearable technology objects & apps
Social Influence	Career Resilience	Testing	Industry 4.0
Time management		UX/UI Design	3D Printing
Customer Service			Emerging technologies industry overview
Design thinking			Technician of the future
Relationship management			Cloud Computing
Project Management			Wireless Generations
Research skills			Trades
Initiative			Data analytics
Originality			Big data
Persuasion			
Collaboration			
50 life skills in total			

Who are our potential students: Personas



Ashok, 17
Demographics Southeast suburbs, Single
Career Goals unclear on career path but knows he is good with IT. Wants to explore his passion for data. Knows he wants to pathway to university.
Career Outcomes Goals in elective stream of:

- Data Analytics

Job Outcomes is employed as a Level one help desk officer but quickly gets promoted due to his passion in data analytics. Considering enrolling in a TAFE course to support him specialising in Big Data because this is fast becoming his passion while he builds his skills in IT specifically around Cloud networking where he has discovered he has a talent



Liam, 16
Demographics Northern region, Single
Career Goals knows he wants to run his own business, loves exploring the future of technology and wants to build a possible product or service. Might pathway to TAFE or work fulltime in a business if he can get a training
Career Outcomes Goals in elective stream of:

- Design Thinking & New Product Design

Job Outcomes Establishing a small business but also plans to get career preparation units in 3D printing and Robotics.



Karim, 17
Demographics Northern suburbs, Single
Career Goals Already has an impressive social media presence as an influencer in makeup and women's rights. He wants to build global social influencer businesses that make a difference. He wants to study social media and digital marketing further
Career Outcomes Goals in elective stream of:

- Social Media
- Digital Content Design

Job Outcomes Continues to build his social media empire earning good 6 around her makeup tips. Plans to expand her business into social influencer around women's rights. Goals in a potential social design that takes 6 years to complete. Becomes a social influencer



Fayna, 15
Demographics Southern suburbs, Australian, Ethnicity, Single
Career Goals Wants to work in trades but unclear which trade to select. Is also an avid gamer
Career Outcomes Goals in elective stream of:

- Future Trades
- 3D Printing

Job Outcomes chooses career exploration unit robotics and 3D printing. Works on apprenticeship as a carpenter. He completes his apprenticeship continuing to work in 3D printing production and tracks trends in robotics. Aspires to manage to explore 3D printing, trade up starting his own business in 3D printing his home while still subcontracting to his old boss. Eventually he becomes partners with his old boss and the business experiences rapid growth due to 3D printing changes to meet housing affordability



Amaria, 16
Demographics Western suburbs, Single, SDA student
Career Goals Loves gaming and social media but has always wanted to be a nurse or a psychologist. Comes from financially challenged family and knows she will need to provide financial support to her family.
Career Outcomes Goals in elective stream of:

- Trades
- Wearable technologies and coding

Job Outcomes Transfers post secondary to the Certificate and Essential Health in TAFE so she can work while she studies. Then enrolls in a Diploma of Nursing. Begins the like working in the disability sector. Continues to study while being part of the SDA. Wearable Tech offering continue working on creating new assistive wear for people in wheelchairs that provides scaffolded support for them to live optimally.

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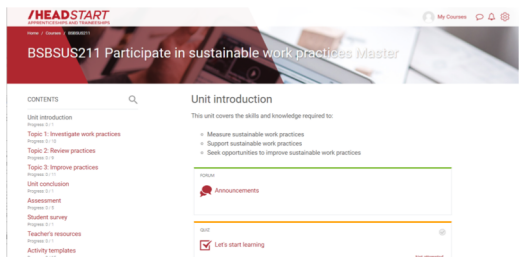
Brainstorm

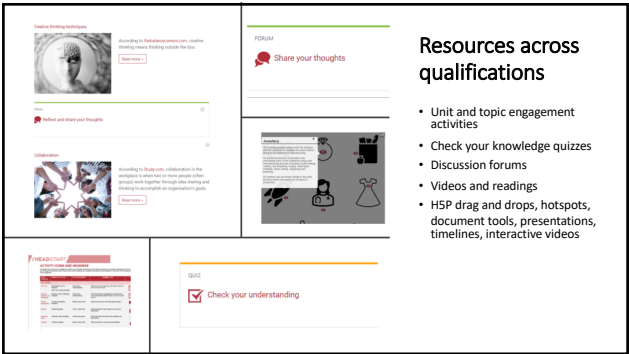


What other qualifications could this work with?

Image from Microsoft stock images

The Learning Management System





- ✓ Content that covers an entire unit
- 📄 Developed as micro-topics in pages
- 👤 Facilitation guides for the trainer
- 📋 Assessment suite to cover the entire unit
- 📦 Activities

- Work performance
- Product
- Industry project
- Portfolio

Appendix 1 – VCE VET Based Assessment Task Type Overview

Task Type	Assessment Task	Assessment Task Description	Assessment Task Details	Assessment Task Examples
Project	Project	Students develop a project that demonstrates their understanding of a concept or skill. The project can be a written report, a presentation, a video, or a physical product.	Students develop a project that demonstrates their understanding of a concept or skill. The project can be a written report, a presentation, a video, or a physical product.	Students develop a project that demonstrates their understanding of a concept or skill. The project can be a written report, a presentation, a video, or a physical product.
Portfolio	Portfolio	Students compile a collection of work samples that demonstrate their understanding of a concept or skill. The portfolio can be a written report, a presentation, a video, or a physical product.	Students compile a collection of work samples that demonstrate their understanding of a concept or skill. The portfolio can be a written report, a presentation, a video, or a physical product.	Students compile a collection of work samples that demonstrate their understanding of a concept or skill. The portfolio can be a written report, a presentation, a video, or a physical product.
Performance	Performance	Students perform a task that demonstrates their understanding of a concept or skill. The performance can be a written report, a presentation, a video, or a physical product.	Students perform a task that demonstrates their understanding of a concept or skill. The performance can be a written report, a presentation, a video, or a physical product.	Students perform a task that demonstrates their understanding of a concept or skill. The performance can be a written report, a presentation, a video, or a physical product.
Written Report	Written Report	Students write a report that demonstrates their understanding of a concept or skill. The report can be a written report, a presentation, a video, or a physical product.	Students write a report that demonstrates their understanding of a concept or skill. The report can be a written report, a presentation, a video, or a physical product.	Students write a report that demonstrates their understanding of a concept or skill. The report can be a written report, a presentation, a video, or a physical product.
Oral Presentation	Oral Presentation	Students give a presentation that demonstrates their understanding of a concept or skill. The presentation can be a written report, a presentation, a video, or a physical product.	Students give a presentation that demonstrates their understanding of a concept or skill. The presentation can be a written report, a presentation, a video, or a physical product.	Students give a presentation that demonstrates their understanding of a concept or skill. The presentation can be a written report, a presentation, a video, or a physical product.
Video	Video	Students create a video that demonstrates their understanding of a concept or skill. The video can be a written report, a presentation, a video, or a physical product.	Students create a video that demonstrates their understanding of a concept or skill. The video can be a written report, a presentation, a video, or a physical product.	Students create a video that demonstrates their understanding of a concept or skill. The video can be a written report, a presentation, a video, or a physical product.
Physical Product	Physical Product	Students create a physical product that demonstrates their understanding of a concept or skill. The product can be a written report, a presentation, a video, or a physical product.	Students create a physical product that demonstrates their understanding of a concept or skill. The product can be a written report, a presentation, a video, or a physical product.	Students create a physical product that demonstrates their understanding of a concept or skill. The product can be a written report, a presentation, a video, or a physical product.

Source: [VETScoredAssessmentGuide.pdf \(ycaa.vic.edu.au\)](#)

- Designed generically to allow for contextualisation by the provider
- Placeholders identified
- Full marking guidance provided
- Appendices provided unless specific to the workplace or provider

IMPORTANT INFORMATION ABOUT YOUR ASSESSMENT

Your assessment	
Program name	Enter qualification or program name
Date due	15A
Time allowed for completion	Enter timeframe appropriate to assessment conditions

Conditions of assessment	
These are the conditions of your assessment - This is an integrated task OR group task. - Where applicable you are required to provide your written responses underneath each question in the template below and submit this completed document. - All tasks and questions must be answered satisfactorily. If you do not complete something in full, your assessor may ask you to provide more information. - You will be required to complete an assessment where lower marking than the evidence presented in the product of your own work. - Any marks or grades are allocated by the assessor of the task. The task will be required as satisfactory or not satisfactory. - Feedback will be provided by you or your assessor as he/she finds this activity done at the end of each assessment task.	

Assessment

- Practical and engaging
- Knowledge embedded where possible
- Aligned to the VCAA assessment framework
- All mapped and covering compliance requirements with the SRTO's

FOLDER

Upload Training and Assessment Documents:

- Assessment Map
- Assessment Task Assessor Version
- Facilitator Guide

Teacher's resources

- 1.CUADES201_AssessmentMapping_v1.0.docx
- 2.CUADES201_Product_AD_v1.0.docx
- 3.CUADES201_FacilitationGuide_v1.0.docx

Download folder



Simulations embedded into assessments

- Real life clients
- Real policies and procedures
- Real assets
- Real tasks and briefs

Simulation systems

The Simulation was built to provide a safe environment for students to apply their learning.

Three simulated businesses were created which included businesses specialising in:

- Drones
- Networking
- Software solutions including helpdesk and social media

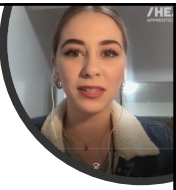
Students are given scenarios where they need to make decisions that will challenge them




HEADSTART
HUMANITIES AND TECHNOLOGY
Keira Wright
Video News









Career Interviews

Emerging Technologies case studies

PRINTING 3D HOUSES GLOBALLY

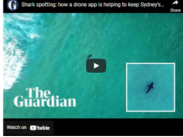


WHY 3D PRINTING IS TAKING OFF GLOBALLY

Innovation in building is often a response to rising costs, skill shortages and the need for homes to grow and evolve.

"According to the United Nations, Rapid Re-Entry, Project Milestone was a part a response to the challenge of people willing to take part in the innovative construction process."

DRONES, IDENTIFYING SHARKS THAT COULD THREATEN SURFERS



SPOTTING SHARKS BEFORE THEY KILL OR MAIM

PROBLEM

"Surfers know they share the waters they love with sharks, but technology may soon offer some added protection from a possible encounter. According to Southern Cross University researcher Andrew Coello, the key to seeing that autonomous drone – which do not require a line of sight operator – will be able to offer shark detection at any point along the coastline."

DIGITAL WARFARE IS ALIVE AND WELL



CYBER CRIME FOR BUSINESS NOW EVOLVING INTO WHOLE COUNTRY ATTACKS

THE CHALLENGE

Growth of Cybercrime Cells

Cyber crime could cost companies worldwide approximately 10.9 trillion annually by 2025. That is a \$5

Case studies

**Examples of real-life problems and processes that align with assessment requirements**

**Threaded through the unit as an ongoing activity**

**Linked to resources and supporting documentation**

Case study

Rollercoaster ride of our life!

The team conducted a lot of initial experimentation, travelled widely to complete research and shared what they learned with 'T'.

They identify their constraints as any factor that could limit their design decisions including the budget, tools, modelling materials, time and experience of the design team.

They consider customers want an experience with more thrill and prefer a virtual reality component.

After riding on the rollercoasters, they agree at least one type of loop is essential.

The team eagerly waits for advice and guidance from 'T'. Finally, they receive an email.

The email says:

Dear interns

Thank you for sharing your initial ideas and what you have learned. You have my approval to proceed and design the ultimate rollercoaster.

Please progress to the design of your rollercoaster. It is a requirement that the roller coaster design contains:

- at least one type of loop
- a thrill element
- virtual reality
- other elements or features you think would enhance the design.

You have two weeks from today to complete this task. Please email to let me know when you have built the model and send me a video presentation.

I look forward to hearing from you.

Regards

Tech and innovation challenges and ideas

-  Videos, websites and activities
-  Link to real world technology and innovations
-  Challenges that provide opportunity to explore and build understanding
-  Relative to content and assessment

Take on this innovation challenge

Can you think outside the box?

Let's practice applying your Divergent Thinking skills in this rapid prototyping challenge.

Watch "Divergent Thinking Challenge: What would you make with that?" to receive your creative design challenge brief.



Step 1: Your teacher will have assigned you to a team and given you a time allowance.

Step 2: In your team, gather your requirements, including a stack of paper clips, some rubber bands, one marble, two sheets of paper and three straws.

Step 3: Brainstorm all your ideas.

Activity

1. Make your way to Scrumblr
2. Collect a sticky note and write your thoughts

How could this be relevant to your students?

<http://scrumblr.ca/VELGTeachers>



Image from Microsoft stock images

Professional Development Program

A critical change management strategy.

16 micro credentials that build the skills teachers need to implement the program depending on whether the teacher:

- works in a secondary or Tech school
- works in a TAFE
- is an aspiring VET/ SBAT teacher

The program reflects that our teachers will come from a range of commencement points and display a broad range of disparate background skills.



Micro credential framework

Micro credential	Level 1	Level 2	Level 3
1. Understanding the program	1.1. Understand the program	1.2. Understand the program	1.3. Understand the program
2. Understanding the program	2.1. Understand the program	2.2. Understand the program	2.3. Understand the program
3. Understanding the program	3.1. Understand the program	3.2. Understand the program	3.3. Understand the program
4. Understanding the program	4.1. Understand the program	4.2. Understand the program	4.3. Understand the program
5. Understanding the program	5.1. Understand the program	5.2. Understand the program	5.3. Understand the program
6. Understanding the program	6.1. Understand the program	6.2. Understand the program	6.3. Understand the program
7. Understanding the program	7.1. Understand the program	7.2. Understand the program	7.3. Understand the program
8. Understanding the program	8.1. Understand the program	8.2. Understand the program	8.3. Understand the program
9. Understanding the program	9.1. Understand the program	9.2. Understand the program	9.3. Understand the program
10. Understanding the program	10.1. Understand the program	10.2. Understand the program	10.3. Understand the program
11. Understanding the program	11.1. Understand the program	11.2. Understand the program	11.3. Understand the program
12. Understanding the program	12.1. Understand the program	12.2. Understand the program	12.3. Understand the program
13. Understanding the program	13.1. Understand the program	13.2. Understand the program	13.3. Understand the program
14. Understanding the program	14.1. Understand the program	14.2. Understand the program	14.3. Understand the program
15. Understanding the program	15.1. Understand the program	15.2. Understand the program	15.3. Understand the program
16. Understanding the program	16.1. Understand the program	16.2. Understand the program	16.3. Understand the program

Challenges with implementation

Challenges	Learnings
Launching a project during COVID	?
Not having the skilled teachers to implement the program	Build a workforce development strategy to upskill interested teachers
Getting industry on-board when in a pandemic	Design alternative modes of work placements including remote and hybrid workers
Supporting the Tech Schools to implement the professional development program	Ensure they had the opportunity to co-design the microcredentials and lead the pilot
Ensuring the correct resources for implementation were available	Allocate funding to purchase emerging technologies

Activity

1. Make your way to Scrumblr
2. Collect a sticky note and write your thoughts

Relevant to QLD industry how does it build a workforce and more engaged students?

<http://scumblr.ca/2/ELGteachers2>



Image from Microsoft Stock Images

Keeping it up to date and relevant

What technologies do you see on the horizon for students to watch that will impact industry?

Examples:

- Health
- Disability
- Forestry



Image from Microsoft Stock Images

Conclusions and Questions

- Pilot is underway
- All 100 resources have been shared into TAFE VLSR
- We are working on a Health, Community Services and Social Assistance curriculum now
- We are expanding on the microcredential approach
- It will now expand into year 9 and 10 for digital literacy



Transforming Senior Secondary Years Tech Futures projects

Thank you

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ANY QUESTIONS?
