

VET for secondary school students: acquiring an array of technical and non-technical skills – support document

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The content analysis

Introduction

This supporting document sets out the content analysis technique and detailed findings that underly part of the research conducted for the report titled *VET for secondary school students: acquiring an array of technical and non-technical skills*. That report is the first in a set of studies that aims to understand the value of VET delivered to secondary school students. This supporting document reflects the detailed investigation of the extent to which training packages assist VET for secondary school students in the development of non-technical or generic skills.

In this support document we provide detailed information on the findings of the content analysis technique we used to investigate the non-technical skills covered in selected training packages and Australian curriculum units reported on in the main report on *VET for secondary school students: acquiring an array of technical and non-technical skills*.

We describe the aims, method and processes for conducting the ‘content analysis’ and present the Skills Terminology Guide used to provide direction for the collection of the data. Also included are detailed findings of the content analysis of each of the training package qualifications investigated, the case studies of Certificate III in Carpentry and Joinery, and Certificate IV and Diploma and Advanced Diploma in Engineering.

Content analysis, methods and processes

Definition of content analysis applied

When we apply the term ‘content analysis’ to the methodology used for this study, we refer to the research technique we used for examining texts. In this case, training and curriculum material to identify in a systematic way the pattern of opportunities for skills development available to for students in secondary school VET programs.

Text analysis process

We are interested in learning about what opportunities there are for secondary school VET students to develop non-technical skills in their VET programs.

To do this we use this content analysis to see within what text these skills are being identified for delivery within selected training packages¹.

¹ For the purposes of this study, only core units were examined within the Australian Training Package samples, elective specialisation units were not included.

Selection of qualifications, training packages and Australian Curriculum Units

Certificates I, II and III were the qualification levels chosen as most applicable to secondary school students undertaking VET². To look more closely at the progression of skills at higher qualification levels we also look at Certificate IV and above (diploma and advanced diploma) in Engineering qualifications.

Certificate I, II and III documents from the following training packages were examined:

- CHC Community Services - release 3.0
- CPC08 Construction, Plumbing and Services - release 9.4
- FSK Foundation Skills - release 1.1
- ICT Information and Communications Technology - release 3.1
- MEM05 Metal and Engineering - release 11.1
- SIT Tourism, Travel and Hospitality - release 1.1

We looked at nine qualifications at certificate I, 20 qualifications at certificate II, and 61 qualifications at certificate III levels (table 1).

Table 1 Training packages by qualification levels examined in the content analysis*

	Certificate I	Certificate II	Certificate III
CPC08 Construction, Plumbing and Services - Release 9.4	1	6	29
CHC Community Services - release 3.0	1	2	5
MEM05 Metal and Engineering release 11.1	2	4	11
ICT Information and Communications Technology release 3.1	1	2	5
SIT Tourism, Travel and Hospitality release 1.1	2	5	11
FSK Foundation Skills Training Package release 1.1	2	1	
Total number of units examined	9	20	61

Note: Links to each of the training packages are provided in the reference list. They are organised in the alphabetical listing according to the initial codes in their titles.

We also examine the General Capabilities Framework of the senior secondary school curriculum (that is, for Years 11 and 12) to help identify some of our non-technical skill categories.

The framework: data categories used in the analysis

In constructing a framework for our content analysis, we were informed by the categories used to describe competencies and employability skills in *Employability skills for the future* (DEST, ACCI and BCA, 2002). These skill categories are:

- communication
- teamwork
- problem solving

2 For the purposes of this study, only core units were examined within the Australian Training Package samples, elective specialisation units were not included.

- initiative and enterprise
- planning and organising
- self-management
- learning
- technology.

To complete our framework and ensure it reflected our objective of analysing course content for evidence of opportunities for students to develop non-technical and STEM skills, we included the following skill categories:

- literacy
- numeracy
- occupational health and safety (OHS)/workplace health and safety (WHS)
- science, technology, engineering and mathematics (STEM).

Skills terminology guide developed for this project

To guide us in identifying and classifying skills belonging to these skill categories, we developed a more detailed **Skills Terminology Guide (Appendix A)**.

We used the Employability Skills Framework to help build our guide³.

In each skill category, the guide lists different aspects or indicators of the skill in action and the range of terminology used to describe these in the training packages and Australian curriculum.

Identifying non-technical skills

Across most Training Packages examined, non-technical skills are listed under the Employability Skills qualification summaries found at the head of qualification requirements. We made extensive use of these summaries. Where these summaries were not present, we looked at the general competencies listed for each qualification. If still not clear at this level, we checked the titles of the units of competency. Following this, if necessary, we looked closely at competencies specific to these units. This enabled us to identify the presence of these skills.

Because non-technical skills in the Australian curriculum units were not directly recognisable against the established categories we had developed, we further mapped the terminology in the Australian curriculum elaborations to terminology used for employability skills in the training packages (table 2).

Table 2 Mapping non-technical skills in the Australian curriculum to employability skills in training packages

Australian curriculum - elaborations	Training packages - employability skills
Creative and critical thinking	Problem solving/Initiative and enterprise/ Planning and organising
Ethical understanding/Personal and social capability	Communication/Teamwork/Self-management

³ Employability Skills Framework (DEST, ACCI and BCA, 2002), <<https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/careers/employabilityskills1.pdf>>, viewed 12 July 2018.

ICT capability	Technology
Learning	Learning

Occupational Health and Safety (OHS) and Workplace Health and Safety (WHS) skills were generally listed in the Employability Skills qualification summaries within training packages and where they were not listed we found them in the units of competency. In our analysis of the Australian curriculum we only included OHS/WHS skills when specifically mentioned in any part of the learning continuums or elaborations.

Recording the observation

In looking for evidence of opportunities for students to develop non-technical and STEM skills we constructed a large matrix (Appendix B). This comprised the main skill categories that we had concluded could be used as umbrella categories for the skills, capabilities and attributes we had identified from the frameworks we had consulted. When reading the units from the selected training packages and relevant Australian curriculum materials we used a *tick* to signify its presence.

Foundation Skills Training Package, literacy and numeracy skills were not specifically articulated in other training packages

Literacy and numeracy skills are skills that are basic to learning across vocational and academic education and are required before a higher order skill can be performed. Noting this, we also looked for specific evidence of literacy and numeracy competencies being specifically described in the units of competency of all the training packages. We expected that these were more likely to be found in the FSK Foundation Skills Training Package. We found that aside from their inclusion in the Foundation Skills Training Package, literacy and numeracy skills were not specifically articulated within the remaining training packages. Literacy and numeracy skills, however, were specifically articulated within the Australian curriculum (note that in reaching this point, we also included Australian curriculum units to the selection for content analysis).

In subsequent analysis after this point, we made a judgement that a prerequisite level of literacy and numeracy would be required for students to undertake training for these qualifications.

Conclusion

The content analysis of relevant units of the selected training packages study found many examples of competencies and content to be taught to secondary students undertaking VET which would enable them to learn the key non-technical skills considered to be required to enter modern workplaces.

Reference List

- Australian Curriculum General Capabilities 2015, <https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/>, viewed 12 July 2018
- CHC - Community Services (Release 3.0), viewed March 2018, <https://training.gov.au/Training/Details/CHC>,
<https://training.gov.au/TrainingComponentFiles/CHC/CHC_R3.0.pdf>CPC08 - Construction, Plumbing and Services Training Package (Release 9.4), viewed March 2018, <<https://training.gov.au/Training/Details/CPC08>>,
<https://training.gov.au/TrainingComponentFiles/CPC08/CPC08_R9.4.pdf>
- Employability Skills Framework (DEST, ACCI and BCA, 2002) viewed 12 July 2018,
<https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/careers/employabilityskill_s1.pdf>
- FSK - Foundation Skills Training Package (Release 1.1), viewed March 2018,
<<https://training.gov.au/Training/Details/FSK>>
https://training.gov.au/TrainingComponentFiles/FSK/FSK_R1.1.pdf
- ICT - Information and Communications Technology (Release 3.1), viewed March 2018,
<<https://training.gov.au/Training/Details/ICT>>,
https://training.gov.au/TrainingComponentFiles/ICT/ICT_R3.1.pdf
- MEM05 - Metal and Engineering Training Package (Release 11.1), viewed March 2018,
<https://training.gov.au/Training/Details/MEM05>>,
https://training.gov.au/TrainingComponentFiles/MEM05/MEM05_R11.1.pdf
- SIT - Tourism, Travel and Hospitality Training Package (Release 1.2), viewed March, 2018,
<<https://training.gov.au/Training/Details/SIT>>,
<https://training.gov.au/TrainingComponentFiles/SIT/SIT_R1.2.pdf>

Appendix A: The Skills Terminology Guide

We constructed this Skills Terminology Guide as a reference resource; it helped us to provide further clarification of the language used by various sources to identify the skills we were looking for.

The aim of this Skills Terminology Guide was to provide researchers with some advice on the types of skills, capabilities and attributes associated with non-technical skills and STEM skills of interest to the study, especially to the content analysis of the selected training packages. The guide is not meant to be exhaustive. These resources included the:

- Skills, capabilities and attributes identified in the 'Employability skills framework' (which appear as normal text) and other relevant literature
- Examples (in italics) taken from the Australian curriculum in general also provided guidance on the types of non-technical that should be considered.

Skills and capabilities

Communication

(Contributing to productive and harmonious relations across employees and customers)

- Sophisticated interpersonal
- Interpersonal
- Communication
- Listening and understanding
- Speaking clearly and directly
- Writing to the needs of the audience
- Negotiating responsively
- Reading independently
- Empathising
- Speaking and writing in languages other than English
- Using numeracy
- Understanding the needs of internal and external customers
- Persuading effectively
- Establishing and using networks
- Being assertive
- Sharing information

- *Appreciate diverse perspectives*
- *Communicate effectively*
- *Communicate across cultures*
- *Consider and develop multiple perspectives*
- *Empathise with others*
- *Consider points of view*

Teamwork

(Contributing to productive working relationships and outcomes)

- Teamwork
- Working across different ages irrespective of gender, race, religion or political persuasion
- Working as an individual and as a member of a team
- Knowing how to define a role as part of the team
- Applying team work to a range of situations e.g. futures planning, crisis problem solving
- Identifying the strengths of the team members
- Coaching and mentoring skills including giving feedback
- *Contribute to civil society*
- *Understand relationships*
- *Work collaboratively*
- *Investigate culture and cultural identity*
- *Explore and compare cultural knowledge, beliefs and practices*
- *Develop respect for cultural diversity*

Problem solving

(Contributing to productive outcomes)

- Resilience
- Advanced problem solving
- Decision making
- Problem solving
- Critical thinking
- Complex and creative problem solving
- Logical reasoning
- An inquiring mind

- Practical intelligence
- *Developing logical arguments*
- Developing creative, innovative solutions
- Developing practical solutions
- Showing independence and initiative in identifying problems and solving them
- Solving problems in teams
- Applying a range of strategies to problem solving
- Using mathematics including budgeting and financial management to solve problems
- Applying problem solving strategies across a range of areas
- Testing assumptions taking the context of data and circumstances into account.
- Resolving customer concerns in relation to complex projects issues
- *Make decisions*
- *Negotiate and resolve conflict*
- *Challenge stereotypes and prejudices*
- *Mediate cultural difference*
- *Consider consequences*
- *Consider points of view*
- *Pose questions*
- *Identify and clarify information and ideas*
- *Organise and process comparable information*
- *Seek solutions and put ideas into action*
- *Apply logic and reasoning to solve problems*
- *Draw conclusions and design a course of action*

Initiative and enterprise

(Contributing to innovative outcomes)

- Adapting to new situations
- Developing a strategic, creative, long term vision
- Being creative
- Identifying opportunities not obvious to others
- Translating ideas into action
- Generating a range of options
- Initiating innovative solutions

- Motivation
- Enthusiasm
- Work independently and show initiative
- *Imagine possibilities and connect ideas*
- *Consider alternatives*
- *Seek solutions and put ideas into action*
- *Transfer knowledge into new contexts*

Planning and organising

(Contributing to long- and short-term strategic planning)

- Managing time and priorities- setting time lines, co-ordinating tasks for self & with others
- Being resourceful
- Taking initiative and making decisions
- Adapting resource allocations to cope with contingencies
- Establishing clear project goals and deliverables
- Allocating people and other resources to tasks
- Planning the use of resources including time management
- Participates in continuous improvement and planning processes
- Developing a vision and a proactive plan to accompany it
- Predicting - weighing up risk, evaluate alternatives and apply evaluation criteria
- Collecting, analysing and organising information
- Understanding basic business systems and their relationships
- *Develop leadership skills*
- *Organise and process comparable information*
- *Make decisions*
- *Evaluate procedures and outcomes*

Self-management

(Contributing to employee satisfaction and growth)

- Healthy lifestyle
- Positive attitude
- Self-motivation
- The right attitude
- Having a personal vision and goals
- Evaluating and monitoring own performance
- Having knowledge and confidence in own ideas and visions
- Articulating own ideas and visions
- Taking responsibility
- Loyalty
- Commitment
- Honesty and integrity
- Reliability
- Personal presentation
- Positive self esteem
- Sense of humour
- Balance attitude to work and home life
- Ability to deal with pressure
- *Recognise emotions*
- *Recognise personal qualities and achievements*
- *Develop reflective practice*
- *Express emotions appropriately*
- *Develop self-discipline and set goals*
- *Become confident, resilient and adaptable*
- *Reflect on intercultural experiences*
- *Recognise ethical concepts*
- *Explore ethical concepts in context*
- *Reason and make ethical decisions*
- *Consider consequences*
- *Reflect on ethical action*
- *Examine values*

- *Explore rights and responsibilities*
- *Consider points of view*
- *Think about thinking (metacognition)*
- *Reflect on thinking processes*

Learning

(Contributing to ongoing improvement and expansion in employee and company operations and outcomes)

- Exposure to the VET industry
- Managing own learning
- Contributing to the learning community at the workplace
- Using a range of mediums to learn - mentoring, peer support and networking, IT, courses
- Applying learning to 'technical' issues (e.g. learning about products) and 'people' issues (e.g. interpersonal and cultural aspects of work)
- Having enthusiasm for ongoing learning
- Being willing to learn in any setting - on and off the job
- Being open to new ideas and techniques
- Being prepared to invest time and effort in learning new skills
- Acknowledging the need to learn to accommodate change
- *Understand themselves as learners*
- *Transfer knowledge into new contexts*
- *Think about thinking (metacognition)*
- *Reflect on thinking processes*

Technology

(Contributing to effective execution of tasks)

- Digital literacy
- Specialist technology
- Data analysis
- Having a range of basic IT skills
- Applying IT as a management tool
- Using IT to organise data
- Being willing to learn new IT skills
- Having the OHS knowledge to apply technology

- Having the physical capacity to apply technology e.g. manual dexterity
- *Recognise intellectual property*
- *Apply digital information security practices*
- *Apply personal security protocols when using ICT to communicate*
- *Identify the impacts of ICT on society*
- *Define and plan information searches using ICT*
- *Locate, generate and access data and information*
- *Select and evaluate data and information*
- *Generate ideas, plans and processes using ICT*
- *Generate solutions to challenges and learning area tasks using ICT*
- *Collaborate, share and exchange using purposefully selected ICT tools*
- *Understand computer mediated communications*
- *Select and use hardware and software*
- *Understand ICT systems*
- *Manage digital data*
- Literacy
- *Comprehend texts*
- *Navigate, read and view learning area texts*
- *Listen and respond to learning area texts*
- *Interpret and analyse learning area texts*
- *Compose texts*
- *Compose spoken, written, visual and multimodal learning area texts*
- *Use language to interact with others*
- *Deliver presentations*
- *Use knowledge of text structures*
- *Use knowledge of text cohesion*
- *Use knowledge of sentence structures*
- *Use knowledge of words and word groups*
- *Express opinion and point of view*
- *Understand learning area vocabulary*
- *Use spelling knowledge*
- *Understand how visual elements create meaning*

Numeracy

- Understand and use numbers in context
- Estimate and calculate
- Use money
- Recognise and use patterns and relationships
- Interpret proportional reasoning
- Apply proportional reasoning
- Visualise 2D shapes and 3D objects
- Interpret maps and diagrams
- Interpret data displays
- Interpret chance events
- Estimate and measure with metric units
- Operate with clocks, calendars and timetables
- Estimate and measure with metric units
- Operate with clocks, calendars and timetables

OHS

- Safety skills
- Assessing worksite safety
- Report and record hazards and risks
- Understand, interpret and apply OHS regulation requirements
- Checking tools and equipment

Appendix B: Content analysis

(unit) = unit within the certificate

(specific e.g.) = competency specific to the unit

(general e.g.) = competency general to the certificate generally described in the employability skills framework summaries of Training Packages.

S = Science T = Technology E = Engineering M = Mathematics

A tick (✓) signifies the presence, in the content of what is to be taught, of opportunities for students to develop the identified skills. A cross (X) signifies that researchers could not find any clear evidence, in the content of what is to be taught, of opportunities for students to develop the identified skills. The letter *a* signifies that researchers believed that such skills (namely basic literacy and numeracy skills) would need to be present if students were to develop the skills required in the unit.

Non-technical and STEM capabilities in selected training packages

Table B1 Non-technical skills content observed in relevant units of the CPC08 Construction, Plumbing and Services Training Package

CPC08 Construction, Plumbing and Services	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS WHS	
Certificate I												
CPC10111 Certificate I in Construction	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
Certificate II												
CPC20112 Certificate II in Construction	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC20211 Certificate II in Construction Pathways	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC20712 Certificate II in Drainage	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC20812 Certificate II in Metal Roofing and Cladding	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC20912 Certificate II in Urban Irrigation	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
Certificate III												
CPC30111 Certificate III in Bricklaying/Block-laying	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30211 Certificate III in Carpentry	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30313 Certificate III in Concreting	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30413 Certificate III in Demolition	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30511 Certificate III in Dogging	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30611 Certificate III in Painting and Decorating	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	

CPC30711 Certificate III in Rigging	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30812 Certificate III in Roof Tiling	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC30911 Certificate III in Scaffolding	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31011 Certificate III in Solid Plastering	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31111 Certificate III in Steel-fixing	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31211 Certificate III in Wall and Ceiling Lining	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31311 Certificate III in Wall and Floor Tiling	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31411 Certificate III in Construction Waterproofing	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31511 Certificate III in Formwork/Falsework	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31611 Certificate III in Paving	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	✓
CPC31712 Certificate III in Post-Tensioning	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31812 Certificate III in Shopfitting	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC31912 Certificate III in Joinery	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32011 Certificate III in Carpentry and Joinery	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32111 Certificate III in Signage	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32211 Certificate III in Joinery (Stairs)	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32313 Certificate III in Stonemasonry (Monumental/Installation)	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32413 Certificate III in Plumbing	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32513 Certificate III in Plumbing (Mechanical Services)	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32612 Certificate III in Roof Plumbing	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32713 Certificate III in Gas Fitting	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32813 Certificate III in Fire Protection	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CPC32912 Certificate III in Construction Crane Operations	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	

Table B2 Non-technical skills content observed in relevant units of the MEM05 Metal and Engineering Training Package

MEM05 Metal and Engineering Training Package	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS	
Certificate I												
MEM10105 Certificate I in Engineering	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM10205 Certificate I in Boating Services	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
Certificate II												
MEM20105 Certificate II in Engineering	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM20205 Certificate II in Engineering - Production Technology	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM20305 Certificate II in Boating Services	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	x
MEM20413 Certificate II in Engineering Pathways	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
Certificate III												
MEM30105 Certificate III in Engineering - Production Systems	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30205 Certificate III in Engineering - Mechanical Trade	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30305 Certificate III in Engineering - Fabrication Trade	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30405 Certificate III in Engineering - Electrical / Electronic Trade	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30505 Certificate III in Engineering - Technical	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30605 Certificate III in Jewellery Manufacture	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30705 Certificate III in Marine Craft Construction	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30805 Certificate III in Lock-smithing	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM30905 Certificate III in Boating Services	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM31010 Certificate III in Watch and Clock Service and Repair	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM31112 Certificate III in Engineering - Composites Trade	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	

Table B3 Non-technical skills content observed in relevant units of ICT Information and Communications Technology Training Package

ICT Information and Communications Technology	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS	
Certificate I												
ICT10115 Certificate I in Information, Digital Media and Technology	✓	x	✓	x	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
Certificate II												
ICT20115 Certificate II in Information, Digital Media and Technology	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
ICT20215 Certificate II in Telecommunications Network Build and Operate	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
ICT20315 Certificate II in Telecommunications Technology	✓	✓	✓	✓	✓	✓	x	✓	<i>a</i>	<i>a</i>	✓	
Certificate III												
ICT30115 Certificate III in Information, Digital Media and Technology	✓	✓	✓	✓	✓	✓	x	✓	<i>a</i>	<i>a</i>	✓	
ICT30215 Certificate III in Telecommunications Digital Reception Technology	✓	x	✓	x	✓	✓	x	✓	<i>a</i>	<i>a</i>	✓	
ICT30315 Certificate III in Telecommunications Rigging Installation	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
ICT30415 Certificate III in Telecommunications Network Build and Operate	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
ICT30515 Certificate III in Telecommunications Technology	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	

Table B4 Non-technical skill content observed in relevant units of the CHC Community Services Training Package

CHC Community Services	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS	
Certificate I												
CHC14015 Certificate I in Active Volunteering	✓	✓	✓	✓	✓	✓	✓	x	<i>a</i>	<i>a</i>	✓	
Certificate II												
CHC22015 Certificate II in Community Services	✓	✓	✓	✓	✓	✓	✓	x	<i>a</i>	<i>a</i>	✓	
CHC24015 Certificate II in Active Volunteering	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
Certificate III												
CHC30113 Certificate III in Early Childhood Education and Care	✓	✓	✓	✓	✓	✓	✓	x	<i>a</i>	<i>a</i>	✓	
CHC30213 Certificate III in Education Support	✓	✓	✓	✓	✓	✓	x	✓	<i>a</i>	<i>a</i>	✓	
CHC30215 Certificate III in Community Services	✓	✓	✓	✓	✓	✓	✓	✓	<i>a</i>	<i>a</i>	✓	
CHC33015 Certificate III in Individual Support	✓	✓	✓	✓	✓	✓	✓	x	<i>a</i>	<i>a</i>	✓	
CHC34015 Certificate III in Active Volunteering	✓	✓	✓	✓	✓	✓	✓	x	<i>a</i>	<i>a</i>	✓	

Table B5 Non-technical skills content observed in relevant units of the SIT Tourism, Travel and Hospitality Training Package

SIT Tourism, Travel and Hospitality Training Package	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS	
Certificate I												
SIT10116 Certificate I in Tourism (Australian Indigenous Culture)	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	
SIT10216 Certificate I in Hospitality	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	
Certificate II												
SIT20116 Certificate II in Tourism	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT20216 Certificate II in Holiday Parks and Resorts	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT20316 Certificate II in Hospitality	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT20416 Certificate II in Kitchen Operations	✓	✓	✓	✓	✓	✓	x	x	a	a	✓	
SIT20516 Certificate II in Asian Cookery	✓	✓	✓	✓	✓	✓	x	x	a	a	✓	
Certificate III												
SIT30116 Certificate III in Tourism	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT30216 Certificate III in Travel	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT30316 Certificate III in Guiding	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT30416 Certificate III in Holiday Parks and Resorts	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT30516 Certificate III in Events	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT30616 Certificate III in Hospitality	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
SIT30716 Certificate III in Hospitality (Restaurant Front of House)	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	
SIT30816 Certificate III in Commercial Cookery	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	
SIT30916 Certificate III in Catering Operations	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	
SIT31016 Certificate III in Patisserie	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	
SIT31116 Certificate III in Asian Cookery	✓	✓	✓	✓	✓	✓	✓	x	a	a	✓	

Table B6 Non-technical skills content observed in relevant units of the FSK Foundation Skills Training Package

FSK Foundation Skills Training Package	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS	
Certificate I												
FSK10113 Certificate I in Access to Vocational Pathways	✓	x	x	x	✓	✓	✓	✓	✓	✓	x	
FSK10213 Certificate I in Skills for Vocational Pathways	✓	x	x	x	✓	✓	✓	✓	✓	✓	x	
Certificate II												
FSK20113 Certificate II in Skills for Work and Vocational Pathways	✓	x	✓	x	✓	✓	✓	✓	✓	✓	x	

Appendix C: Content analysis for Case Study on Certificate IV Metals and Engineering Training Package

(unit) = unit within the certificate

(specific e.g.) = competency specific to the unit

(general e.g.) = competency general to the certificate

a = assumed knowledge

S = Science T = Technology E = Engineering M = Mathematics

Table C1 Non-technical content observed in Cert IV, Diploma, Advanced Diploma and Vocational Graduate Diploma in MEM05 Metal and Engineering Training

	Communication	Teamwork	Problem solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology	Literacy	Numeracy	OHS	
Certificate IV												
MEM40105 Certificate IV in Engineering	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM40205 Certificate IV in Boating Services	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM40311 Certificate IV in Advanced Jewellery Manufacture	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM40412 Certificate IV in Engineering Drafting	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
Diploma												
MEM50105 Diploma of Engineering - Advanced Trade	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM50212 Diploma of Engineering - Technical	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM50311 Diploma of Jewellery and Object Design	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
Advanced Diploma												
MEM60112 Advanced Diploma of Engineering	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
MEM60211 Advanced Diploma of Jewellery and Object Design	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	
Vocational Graduate Diploma												
MEM80112 Vocational Graduate Diploma of Engineering	✓	✓	✓	✓	✓	✓	✓	✓	a	a	✓	

