
A focus on learning

*Balancing outcomes and development in
Australian Vocational Education and Training*

Steven Hodge

Deniese Cox

Jason Skues



Griffith
UNIVERSITY

Queensland, Australia



A focus on learning

*Balancing outcomes and development in
Australian Vocational Education and Training*

Steven Hodge and Deniese Cox, Griffith University

Jason Skues, Swinburne University



Cover image courtesy of Aaron Burden

© Griffith University 2021

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photo-copying, recording, or by any information storage and retrieval system, without prior written permission.

Published by Griffith University

CRICOS Provider: 00233E

DOI: <https://doi.org/10.25904/1912/4301>

A focus on learning

About the research

Many professionals involved in adult learning are perplexed by the dichotomy of ‘competent’ or ‘not yet competent’ as the two main outcomes recognised in vocational education and training (VET). Reports of poor quality in the VET sector often relate to people being assessed as competent when they are not able to perform all of the functions described in competency standards to the standard required in a workplace, as per the current definition of competency:

...the consistent application of knowledge and skills to the standard of performance required in the workplace. It embodies the ability to transfer and apply skills and knowledge to new situations and environments. (Federal Register of Legislation, *Standards for Registered Training Organisations (RTOs) 2015*. <https://www.legislation.gov.au/Details/F2017C00663>)

This study was driven by the apparent contrast between the VET sector’s current competency paradigm and the reality, perceived by learning and development professionals, that competency is not a yes or no proposition. Competency is developed over time, with various levels of expertise gained from ongoing experience in the performance of work functions under specific operating conditions. This belief is regularly voiced by trainers and industry stakeholders as Skills Impact goes about its contracted work to develop national skills standards, commonly known as competency standards and qualifications, on behalf of industry.

To explore this issue, Skills Impact engaged Griffith University, to conduct a literature review of recent and legacy publications and develop a survey, conducted in 2019, which was aimed at VET professionals and stakeholders. The research questions whether a system that only defines competency *outcomes* can reliably guide an individual’s competency *journey*. It posits that the current system would benefit by balancing its focus on outcomes with a focus on process.

Central to conceptualising a balanced system is understanding the relationship between the outcomes expressed in units of competency and the process of developing competency on students’ learning journeys.

The report draws three main conclusions:

- 1. The system is focused more on competency outcomes than learning and developmental processes, which is to the detriment of students, trainers and the consistency and quality of outcomes.**
- 2. Competency is developed over time, through a learner’s developmental journey. A system focused only on outcomes perpetuates unacceptably wide variance in the student journey and the assessment of competence.**
- 3. National curriculum to support learning and development processes is seen as an important solution. While not currently part of the VET system, national curriculum would help to balance the system’s focus on outcomes with a focus on process, including a greater emphasis on workplace-based learning.**

For the VET system to be successful, industry needs to continue to define the competency outcomes required and more emphasis needs to be placed on the *learning and development process* leading to those outcomes.

Overall, the research shows that developmental processes in Australian VET could be better supported with the formulation of training objectives within newly designed curriculum and

assessment resources, and by a greater role for workplace experience throughout students' learning journeys.

Michael Hartman

Chief Executive Officer, Skills Impact Ltd



Executive Summary

1. Australian VET is designed as a competency-based system. The system is focused on students' learning outcomes aligned to real work situations. Clearly stated VET outcomes provide a direct connection with workforce roles, which is of great value to beneficiaries of the system.
2. Governments and industry devote significant energy and resources to define industry agreed skills and vocational outcomes for our VET system. Units of competency describe the outcome, not the training journey. Employers, students and training providers are motivated to focus on outcomes by funding mechanisms and auditing regimes. Each training provider must establish their own methods to train somebody to become competent. Their training methods are audited against units of competency which were never intended or designed to describe training methods. This creates difficulties with regulation and has affected the quality of VET since the introduction of Competency Based Training (CBT).
3. With large, complex systems like the Australian VET system there are many ways to analyse and understand system problems. In this report, a line of analysis based on the nature of competency is pursued. The main conclusion is that, for the VET system to be successful, industry needs to continue to define its required skill outcomes but much more emphasis needs to be placed on the *learning and development process* leading to those outcomes.
4. Training providers are expected to take care of the learning and development side of the equation. They are required to have the expertise to break down statements of outcomes (qualifications, skill sets and units of competency) into achievable sequences of learning activities that will lead, in a systematic fashion, to those defined outcomes. They are expected to be able to resource, create and select the curriculum materials that will support learning. While many providers and trainers are expert in these high-level skills, distribution of this expertise is not necessarily even and the need for this to be done by each individual RTO represents duplication and inefficiency in the system.
5. This report advances some ways of looking at the challenge of balancing the system so that, from top to bottom, there could be as much commitment to understanding and supporting the process of *learning and development* as there is to defining, incentivising and auditing outcomes. The study reported here clarifies how the system could be improved with a tighter focus on *learning and developmental processes*.
6. Central to conceptualising a balanced system is understanding the relationship between outcomes expressed as units of competency and the process of the development of competency or learning in people. Research into the development of skill suggests there are stages or phases of development that start with memorisation, observation and practice involving explicit rules, which then moves progressively toward expert performance in which a worker is no longer concerned with rule-following but rather with efficiency, flexibility, quality and innovation. Extended periods of practice under varying conditions promote this expert performance.
7. This research suggests that trainers recognise phases of competency development. Making *learning and development* a concern of the whole system may help to balance it as well as send important signals that learning, as a lifelong journey, is needed to support innovation, flexibility and agility. Survey data collected for this project suggests stakeholders are broadly aware of a developmental dimension of VET and tend to associate competency with an earlier level of performance than a more accomplished level. This data suggests there would be value in clarifying the relationship between development and competency as it is defined for the VET system.
8. Another element of a balancing approach is to elevate curriculum to a system-wide concern. Curriculum can be defined as those resources that support development of competency.

Curriculum complements statements of outcomes as support and direction for the work of providers, trainers and assessors. 'Curriculum' has been viewed in recent history i.e., starting 25 years ago, as a prominent feature of an outmoded approach to VET. As a support for learning, curriculum has remained a component of contemporary VET, albeit a secondary matter that is properly the concern of providers and trainers. By raising the importance of curriculum so that it becomes an essential concern of the whole system, but without relaxing a commitment to formulating outcomes, greater balance between training outcomes and occupational outcomes may be achieved.

9. Part of the task of repositioning curriculum is to clarify that units of competency, as statements of outcomes, should not be made to serve as curriculum. If units of competency are treated as curriculum, then a learner's developmental journey is at risk of being driven by performance mimicry instead of being made with understanding and flexibility after a developmental process.
10. To relate development and curriculum, it is necessary to break down statements of outcomes as endpoints of development to ensure that development leads in the direction of those outcomes. Instructional designers stress the importance of formulating 'enabling objectives' so that instruction moves in a systematic way towards agreed outcomes, or terminal objectives. In the VET context, units of competency describe terminal objectives developed by writers working with industry. A system focused on *learning and development* would ask what does it take to reach this endpoint, and how can that process be signposted in enabling objectives? Learning and development professionals would need to be engaged in that discussion.
11. A developmental approach to competency draws attention to the importance of extended periods of practice in order to move from a phase of memorisation of rules and imitation of technique (initial stages of development) towards expert performance (more accomplished performance level of the developmental scale). Research on learning in the last few decades has underlined the importance of workplace practice for developing workplace skills and knowledge. The project reported here also cast doubts on the efficacy of formal learning programs, in and of themselves, to develop sophisticated workplace performance. Taking a developmental approach into account, it would appear that formal learning is most effective when it promotes earlier stages of development of skills and knowledge, while practice at work becomes increasingly important for completing the journey of competency.
12. Quantitative data from a survey of 452 VET stakeholders (mostly trainers and assessors), as an initial exploration of sector views, which posed questions about development, curriculum, enabling objectives and the role of workplaces in competency development suggests the following:
 - a. Respondents tended to agree that competency develops through stages.
 - b. Respondents tended to agree that the VET system should recognise stages of competency development.
 - c. Respondents tended to agree that, given sample descriptions of different stages of competency development, the VET system should recognise earlier rather than later stages of development.
 - d. Respondents tended to agree that statements of enabling objectives should be made available alongside units of competency (viewed as statements of final outcomes).
 - e. Respondents tended to agree that nationally consistent curriculum or training resources should be made freely available to support competency development.

- f. Respondents tended to agree that nationally consistent assessment resources should be made freely available to support competency assessment.
 - g. Respondents tended to agree that workplaces should take a more direct role in training.
 - h. Respondents tended to disagree that workplaces should take a more direct role in assessment.
13. Overall, the survey points to an awareness of developmental processes in Australian VET that could be better supported with formulation of enabling objectives (or training standards), availability of curriculum and assessment resources, and a greater role for workplaces in the learning and development process.

Contents

A focus on learning.....	3
About the research.....	3
Executive Summary.....	5
Contents.....	8
Introduction.....	9
Review of assumptions.....	10
Developing competency.....	11
Curriculum.....	13
Enabling objectives.....	15
Learning environments.....	16
Researching a focus on learning.....	19
Survey results.....	20
Development.....	21
Competency is the first step.....	23
AQF levels reflect stages.....	24
Development is personal.....	25
The system is complicated enough as it is.....	25
Enabling objectives.....	26
Curriculum.....	26
Enabling objectives would complicate.....	27
Wanted this for years.....	27
Need a flexible system.....	28
Sharing resources.....	29
Consistency would reduce competition and quality.....	29
Learning environments.....	30
Workplace a valuable learning environment.....	30
Uneven capability and capacity.....	31
‘Leave assessing to the assessors’.....	31
Learning environment limitations.....	32
Disincentives to contribute.....	32
Discussion.....	34
Development.....	34
Curriculum and Enabling objectives.....	35
Learning environments.....	37
Conclusion.....	39
References.....	41
Appendix. Survey questions.....	43

Introduction

Australian vocational education and training (VET) is competency-based. *Competency* is defined in legislation for the Australian VET system as:

...the consistent application of knowledge and skills to the standard of performance required in the workplace. It embodies the ability to transfer and apply skills and knowledge to new situations and environments. (Federal Register of Legislation, *Standards for Registered Training Organisations (RTOs) 2015*. <https://www.legislation.gov.au/Details/F2017C00663>)

To reach this goal, Australian VET specifies the standard of performance required in the workplace in 'competency standards' (also called 'units of competency' or simply 'competencies'). Several thousand competency standards have been written for Australian industry. To organise this mass of competencies, 'Training packages' have been devised that collect units of competency specific to a given industry with rules for combining units into qualifications and skill sets. Training packages include additional advice such as special assessment requirements for the target industry. The units of competency contained in training packages are intended as the reference point for all program design, training and assessment in the Australian VET system.

By itself, the legislated definition of competency, and the information contained in training packages, are not sufficient to inform the various activities of contemporary Australian VET. Operationalisation of the definition necessitates the introduction of additional assumptions. Two of these assumptions that are particularly important are that (1) competency standards can be taken as the primary reference point for developing training and assessment resources and activities, and that (2) formal VET provision (separated from work practice) is sufficient to develop competency as defined in those standards.

This report considers these assumptions from two perspectives. First, an analysis of the main concepts embedded in the assumptions is presented. This analysis indicates that there are entrenched oversights in Australian VET that deflect the system from a focus on learning. The main oversights pertain to the individual developmental process that necessarily precedes attainment of competency, and the weight of evidence and theory to the effect that formal training provision is intrinsically limited as a means of developing competency (as defined in the legislation). The second perspective emerges from a survey of VET stakeholders – mainly trainers – that included questions based on the analysis of concepts. The survey suggests that stakeholders are generally aware that contemporary VET is overlooking processes important to learning, and that the legislated concept of competency is perhaps a source of confusion rather than clarity regarding the goals of the system. The report concludes with a statement of implications and suggestions for further research that may helpfully inform efforts to improve Australian VET.

Review of assumptions

The first assumption we consider that *competency standards can be taken as the primary reference point for developing training and assessment resources and activities*, seems a fair and obvious principle for implementing a competency-based training system. If Australian VET is supposed to produce graduates competent as defined in standards formulated by industry, then surely those standards should be the main focus for the design and development of training and assessment resources and activities. However, while it does make sense that industry-defined standards should be a concern of designers, trainers and assessors, in that they describe the end point of competency, that these should be their central or exclusive concern is more problematic. This is in large part because the role of the system is to bring people up to the standard defined by industry. The standards express the *end point* of a whole process of development which can have many twists and turns and variants, and which requires a great deal of planning, skills in applying learning theory and resourcing to move people toward that outcome.

The upshot of this observation is that the Australian VET system must be about the *whole process of development* that precedes achievement of performance as defined in competency standards. It is not the purpose of this report to provide an exhaustive review of *why* the essentially developmental nature of VET has been lost from sight, although a few suggestions will be offered. Factors that can be cited include the strident promotion of doctrines such as ‘VET should not be a “time-served” system’, or ‘VET should be an “outcomes based” system’, or ‘VET should be an “industry-led” system (with leadership implemented through formulation of end points of development)’. These are doctrinal positions of considerable influence that can desensitise us to the difficult challenge of constructing a system focused on the learning inputs that support the development of competency. Thus, if we become averse to devoting time to learning, then it is an easy step to neglect of the development process. If we become focused on outcomes, we may become impatient with the process that leads us there. And if we see industry leadership as limited to formulating outcomes then we may be tempted to discount the role of workplaces and employers in the process of development. Beside these (and other) doctrinal factors, there are policy factors. These include powerful auditing regimes that force attention on competency standards as learning outcomes, prompting VET providers, trainers and assessors to channel their energies disproportionately to the end of the development process when logically their greatest and most creative efforts should be directed to the process of learning as it contributes to developing competency. Again, funding policy focuses attention on the end of the development process, not the process itself. These policy factors serve as potent shapers of motivation, how resources are applied, how shortcuts can be taken and in general the thinking about settings for training and assessment.

To rebalance the system – that is, to ensure that appropriate efforts are put into the learning that supports the *development of competency* – we need to reconnect with ideas and principles that relate to learning and development. The overarching purpose here is to find and maintain balance between attention to learning, training and student development and attention to outcomes. The argument so far is that the balance has been tipped toward outcomes and that vital learning processes are overlooked, particularly from the point of view of the regulators. In this report ‘rebalancing’ is not about neglecting outcomes, but rather promoting a system that is serious about the learning and training processes that contributes to those outcomes. Getting serious about this issue can start with an appraisal of research and theory concerned with learning and development of competency. In this report a cross-section of contributions is canvassed to suggest ways to rebalance Australian VET. The first concept to be considered is *learning as development*. Here, research of the Dreyfus brothers will be discussed that underlines the importance of recognising stages in the development of work performance. Their work offers a structure for thinking about the process of developing competency. Criticisms of and alternatives to the Dreyfus model are also surveyed. The

second concept to be considered is that of *curriculum*. Outside of Australian VET, curriculum theory and research has created sophisticated ways of thinking about how we can help people to learn. In this report, attention is given to the generative relationship between curriculum and competency standards with a view to opening up fresh thinking about how the process of learning and the outcome of competency can be best supported. The third concept considered is that of *enabling objectives*. In this discussion, the important distinction between these kinds of learning objectives and so-called ‘terminal objectives’ is examined, and how this distinction can be useful for our system. To anticipate this part of the discussion, the case is made that competency standards are equivalent to terminal objectives, but our system has not attended to the need for very careful thought to be put into the construction of enabling objectives.

The second assumption, that *formal VET provision is sufficient to develop competency as defined in competency standards*, may be more difficult to credit than the first assumption. In VET in particular, it would seem obvious that the workplace is an important context for competency development, or perhaps the primary context. However, an effect of years of questioning the capacity of the system to produce the quality outcomes has been a tightening of regulation that has increased the responsibility placed on providers to guarantee end point competency. Outside of apprenticeships and traineeships the system has moved to a situation where the workplace has been displaced as a context for development and assessment. The analysis presented below revisits research and theory that highlights the importance of work itself as a site for competency development as a preliminary to reasserting the need for providers and workplaces to cooperate in the development and assessment of competency. Rebalancing Australian VET system thus also suggests acknowledging the contribution that workplaces can make to the development and assessment of competency.

Developing competency

A powerful assumption reigns in Australian VET that competency is something that can be achieved once-and-for-all, that an individual is either competent or not. This assumption informs assessment practice which almost universally reflects the idea that a judgement of competent or not-yet-competent is possible and appropriate. However, the idea that competency is something that is either present or absent is not supported by research into the acquisition and practice of skills and knowledge. Rather, research suggests that skills and knowledge relating to a certain occupation or body of knowledge is acquired and consolidated over an extended period and such acquisition is never truly ‘complete’. A key model of the development of work performance – the so-called ‘Dreyfus model’ – reveals the more subtle nature of such acquisition. According to this model, competency should be viewed as a ‘continuum’ rather than a ‘quantum’. In other words, competency is something gradually developed and continuously improved rather than something one doesn’t have and then does.

The brothers Stuart and Hubert Dreyfus were originally hired by the U.S. Air Force in the 1970s to help improve understanding of how pilots develop their skills. This research challenge arose when that organisation started to question the effectiveness of formal training for the preparation of pilots. The U.S. Air Force had become critical of the idea that ‘strict rule-following produces skilled behaviour’. Their own observations suggested pilot skill was not a case of memorising and following rules but of ‘intuitive, situational judgement’ (p. 140). The model that resulted from the Dreyfus’s (1982) research was called the ‘Five-stage developmental model of skill acquisition’ and accounted for the formation of skills from the stage of the absolute beginner through to expert. Specifically, the stages of this model are novice, advanced beginner, competence (not to be confused with ‘competency’ as defined for Australian VET), proficiency and expertise. The model proposes that skill acquisition proceeds through stages that can be distinguished by special characteristics. In brief, the stages are identified by shifts away from the memorisation of rules – components of tasks that can

be taught – through to fluent, intuitive mastery of an occupation. This last stage occurs after an indeterminate but extended period of time through ‘the acquisition of vast concrete experience’ (p. 146). The Dreyfus and Dreyfus model of skill acquisition has become a widely accepted way to understand learning in skilled occupations, replacing more simplistic approaches that assume skill is simply about memorising and applying procedures (such as the U.S. Air Force originally believed). Rather, with a more sophisticated ‘developmental’ model, what is defined as ‘competency’ in Australian VET can be considered something gradually acquired with full mastery – the true ‘standard of performance required in the workplace’ – to be expected after considerable independent practice. A developmental approach to skill acquisition such as the Dreyfus and Dreyfus model rules out the current system reasoning of skilled performance as something achieved in or soon after formal training. The developing worker needs to take the rules, procedures, and concepts they learn, practice them, and with time will perform at an acceptable level. According to the Dreyfus’ model, only basic, routine tasks can be taught and mastered in the context of formal training.

The Dreyfus model of skill acquisition has not only been applied to diverse areas of skills development – from pilot training to nursing education – it has been subject to extensive criticism. The bulk of criticism is directed at the characterisation of expert performance in the model. For example, Gobert (2018a, 2018b) argues that the Dreyfus model fails to account for ‘intuitive’ performance – the idea that experts no longer consciously apply rules they have learned but act in a more fluid way within a given work situation. For Gobert and others, a more rigorous, interdisciplinary account of intuition is required. Kinchin and Cabot (2010) proposed a reconceptualisation of intuitive performance based on ‘dual processing’. Expert performance in this model emerges from the interaction of ‘chains of practice’ and ‘networks of understanding’ and that an expert is someone sufficiently acquainted with both and able to rapidly draw from one or the other kind of processing. In the medical education setting, Peña (2009) proposed that expert performance involves an interplay of implicit and explicit domains of knowledge. In other words, some of what an expert does in this setting is about conscious rule application and other parts more intuitive. The upshot of criticism of the Dreyfus model of skill acquisition is that the notion of intuitive performance at the expert end of the scale needs to be interrogated and developed. It is worth noting that Stuart Dreyfus has remain active in this debate, for example publishing a rejoinder to Gobert (2018a) that clarifies that the model always positioned experts as applying reason as well as intuition in highly skilled performance (Dreyfus & Rouse, 2018).

For the purposes of this study, an important conclusion to draw from the critical literature on the Dreyfus model is that few researchers question that skill develops, and that it starts with memorisation and conscious application and practice of rules, procedures and concepts. In brief, the use of the Dreyfus model in the present study is not impacted by the critical literature because we are only asserting that there is a developmental process, and that it does begin in a certain way (e.g., rule following). These premises are sufficient for our purposes, and importantly, we do not make particular claims about expert performance except that it differs from novice performance. It should also be noted that the usefulness of the Dreyfus model continues to be appreciated in contexts where it is valuable to be able to describe entry level through to more accomplished levels of performance. For example, Australia’s Core Skills for Work Developmental Framework (Australian Government, 2012), a model for describing employability skills acquisition and development, is based on the Dreyfus model for this reason.

A key implication of the Dreyfus model for the present study is that the ‘standard of performance required in the workplace’ highlighted in the Australian VET definition of competency matches most closely to the later stages of the Dreyfus model, while ‘the ability to transfer and apply skills and knowledge to new situations and environments’ is definitely characteristic of the later stages. In

other words, the definition of competency legislated for the Australian system appears to describe higher stages of a developmental model. By the same token, formal training can only shape novice and advanced beginner learning. What this indicates is that the definition of competency adopted by the Australian VET system is not something that can be expected from new graduates of formal VET. Extended practice will be necessary to reach the level of performance indicated by the definition of competency. The implication is clear: formal VET programs can only initiate the development of competency; they are not sufficient to produce competency. At the same time, assessment of competency – as defined for Australian VET – can realistically only be undertaken after considerable workplace practice. According to a developmental approach to skill learning, it does not make sense to demand measurement and certification of competency (as it is defined for Australian VET) upon completion of formal training.

Instead, what a developmental approach to skill acquisition suggests is that we can only realistically expect formal training to take beginners through the early stages of development where memorisation, close guidance and initial practice are critical to later success. Similarly, assessment tied to formal initial training can only hope to measure progression through the early stages of development when it is possible to gain evidence of memorisation of terms and processes, and initial capability with handling equipment, materials and/or people. Beyond that point, both training and assessment in the sense we know them in formal settings become much harder to implement in a meaningful way. With the development of skill to the level of competency, timeframes become more dependent on individual capability, opportunity and challenges, and ‘evidence’ becomes less observable and more a matter of inference, with greater scope for disagreement between assessors.

Curriculum

The assumption that appropriately specified standards will serve as sufficient guidance for program design, training and assessment to produce competent graduates has promoted a practice that *collapses the distinction between competency standards and curriculum*. That is, under the current system, the information from units of competency serves, in many cases, as program topics and the structure of units are reflected in the structure of programs. For instance, unit titles may become the titles of major program sections, and elements may become topics for learning sessions. It is relatively easy to see why this has happened, but more difficult to spell out the critical nature of the problems it creates.

The practice of making competency standards substitute for curriculum was triggered by messages that came with training reform in Australia during the 1990s, a period of significant upheaval in vocational education in many parts of the world. The ‘Training Reform Agenda’ as it came to be called in Australia carried a critical perspective on the way vocational education was conducted before the reforms (i.e., during the 1970s and 80s). Essentially, the criticism was that trainers had taken control of VET and effectively sidelined industry in decision-making about what should be learned. The claimed practice of trainers was associated with the term ‘curriculum’, that is, teaching vocational education students what trainers *believed* was important rather than what industry *knew* was important. Training reform had as a central goal shifting control for deciding what vocational education should teach from educators to industry representatives. When training packages became the favoured way of organising competency standards, the contrast between the old approach and the new could be summed up in terms of curriculum versus training packages. ‘Curriculum’ became a byword for the old, trainer-centred approach, while training packages became associated with the new industry-centred approach. The situation at the time was summed up by Smith (2002), who reported ‘A pronouncement by the then Chief Executive Officer of ANTA five years ago to the effect that following the introduction of Training Packages, curriculum no longer existed’ (2002, n.p.), encapsulating the message of the then Australian National Training Authority (ANTA) about the

attitude to curriculum in the new system. Like other bodies set up at the beginning of training reform, ANTA was very positive about the new approach and pursued its aims in part by setting up a strong contrast with what went before. It is worth noting, however, that in the broader world of research into education and training, a technical definition of 'curriculum' prevails that actually incorporates competency standards and training packages. That is, education and training research uses the heading 'curriculum' to cover the question of what is worth teaching and what is worth training and assessing. From this perspective, training packages describe the endpoint of education and training processes, the ultimate 'worth' of VET, and therefore falls precisely into the definition of curriculum, however as curriculum in themselves training packages are grossly deficient, they describe industry outcomes not learning processes. For training packages to be called curriculum they need to document learning processes and learning outcomes as steppingstones towards competency. Training packages are not currently designed to do this.

The practice of collapsing the distinction between competency standards and curriculum was initially authorised by messages associated with training reform and has been reinforced by audit and funding mechanisms. The 'audit culture' that has become a prominent part of Australian VET has had many outcomes including a tendency to segment or structure training programs on the basis of the segmentation or structure of training package qualifications. When auditors – who may have no background in designing, training and assessment – come to scrutinise programs of VET learning, their own perspective on learning is segmented or structured by units of competency and collections of them into skill sets and qualifications. That is their reference point, and it is perfectly understandable that it should be so. Registered training provider owners, managers and administrators are naturally concerned to maintain registration and thus seek in their own products a segmentation or structure consistent with the perspective of auditors. The result is that, regardless of any practices, knowledge or values underlying actual competent work that extend beyond the boundaries of individual units of competency, it is only what sits within these boundaries that has a legitimate place in auditable programs of VET learning. Designers, trainers and assessors themselves become accustomed to dicing up real work in accordance with the boundaries of individual competency standards because that is what the RTO wants and what they know the auditors are looking for.

A similar focus on the part of designers, trainers and assessors is reinforced by government funding mechanisms. One of the advantages of competency-based VET from a government perspective was the potential to fund outputs rather than inputs by paying providers on the basis of graduations. The value of a competency-based approach in this context is that it offers a standardised graduation outcome, that is, a learner has been assessed as competent in standard X, Y or Z. The implementation of this type of funding then directs provider attention to delivering particular competency standards or a set of standards. Designers, trainers and assessors in turn are expected to design, train and assess on the basis of individual units, maintaining the boundaries of the units regardless of whether these agree with what is known about the learning needed to meet the work and workplace outcomes described in units.

Thus, through the rhetoric of training reform ('curriculum was the old way of doing VET'), and through powerful influences on program design in the form of audit approaches and funding mechanisms, students experience VET as segmented at a unit and sub-unit level. Providers who are compelled to capitulate to audit and funding pressures simply teach units and elements. However, the collapse of the distinction between training packages and curriculum that is a hallmark of contemporary Australian VET is something that was warned against from the very start of training reform. Roger Harris, Hugh Guthrie and colleagues published a comprehensive study on competency-based education and training in 1995 to inform and guide implementation of the new approach to VET in Australia. In their study a firm distinction was maintained between competency

standards and curriculum which were then systematically related in the context of creation of vocational education programs. Their argument was that competency standards must be ‘translated’ into curriculum or learning programs for the purpose of training and assessment. The point is made that, ‘standards, themselves, are not curriculum documents’ (Harris et al., 1995, p. 131). To translate standards into curriculum involves, ‘Getting at and challenging the underlying meaning of competency standards and organising learning experiences and activities in such a way as to develop and attribute competency as efficiently as possible.’ The suggestion here is that learning programs should not drill students in the performances described in a competency standard but develop that which underlies and enables competent performance. VET curriculum should therefore be ‘concerned more with learning and training, not the performance in the workplace’ (Harris et al., 1995, p. 131). Certainly, assessment will focus on confirming workplace performance, but how a person learns to be able to do that is not described in competency standards. Yet we find that in many cases, contemporary VET learning content and structure directly follow the information and layout of competency documents. Thus, despite the warnings of Harris et al. (1995), our system has become one in which ‘curriculum’ is a contentious term, potentially to the detriment of learning.

Enabling objectives

Training packages and competency standards do not explicitly reflect the language of ‘objectives’, but the thinking behind them stems from an earlier concern with behavioural objectives, a concern that alerts us to a problem implicit in Australian VET practice. Behavioural objectives theory can be encapsulated in the idea that any program of learning should be oriented to clearly stated goals. If the endpoint of instruction can be described adequately, then efforts to align learning to what we want achieved will be more certain and accountable. At the same time, design and conduct of assessment will be more straightforward since the goal will already be described and can serve as the reference-point and standard. Behavioural objectives theory has been enormously influential in the worlds of education and training. The influence on Australian VET can be observed in the structure of competency standards. The theory says that a clearly stated objective is one that describes the goal of learning in a clear way, presents criteria of performance and ideally states the conditions under which the performance should be observed. While statements of conditions are not a dedicated section within contemporary competency standards, descriptions of objectives (‘elements’) and performance criteria remain as major components of the standards. The standard format of a unit of competency declares that *‘Elements describe the essential outcomes of a unit of competency’*, while *‘Performance criteria describe the performance needed to demonstrate achievement of the element’* – definitions that reflect traditional behavioural objectives theory.

While Australian VET has embraced behavioural objectives thinking, an important distinction within objectives theory has not been as influential despite its fundamental role in operationalising objectives. This distinction is between ‘terminal’ objectives and ‘enabling’ objectives. The theory goes that objectives should be regarded as a device that not only captures the end state of a learning process, but just as importantly, the steps on the way. Two kinds of objectives are required to develop a program which leads to the required outcomes. An excerpt from the work of instructional design researcher Stephen Yelon (1991) clarifies this idea:

Terminal objectives are those objectives mastered at the end of an instructional segment, and enabling objectives are those objectives mastered during an instructional segment and acting as prerequisites for a terminal objective. A terminal objective for a driving course might be: “Under any driving conditions, weather or road conditions, such as driving in a snowstorm on a highway, students will be able to execute any driving manoeuvre, according to the law and safety principles.” There are literally dozens of enabling objectives

prerequisite to this course terminal objective, such as, a unit objective on parking, to include parallel parking on either side of the street in any traffic or weather conditions. (1991, p. 95)

The distinction between enabling and terminal objectives is thus fundamental to the theory. However, in Australian VET the focus has very much been on the terminus or end of the learning process reflected in competencies. It seems that it has been assumed it is OK to leave the thinking about enabling objectives to training providers on the understanding that whatever they formulate will be sufficient so long as it terminates in performances as described in competency standards. But the reality is that the body of research and knowledge behind behavioural objectives theory strongly indicates that rigorous, systematic work is required to formulate enabling objectives. The suggestion is that enabling objectives for standardised terminal objectives might themselves be standardised, or at least form part of the public expression of VET outcomes. And there is every reason industry would have an interest in the formulation of enabling objectives, because such objectives describe real, industry-relevant *prerequisite* knowledge and skills. These should be no more variable than the competency standards themselves, and thus worthy of efforts to analyse, formulate and scrutinise on the part of industry.

It could be objected that enabling objectives are already in the public gaze and are indeed formulated by industry, and that we see them at work in the form of, for example, Certificate I level competencies as underpinning Certificate II level competencies which underpin Certificate III level competencies and so on. While it certainly can be argued that some competencies at a lower level enable some competencies at a higher level, the objection does not take into account the definition of competency for the system which applies wholly to every level within it. The point being made is that even a competency at the most basic level functions as a terminal objective and against it, enabling objectives can be formulated to mark milestones on the developmental process.

The main issue arising from the distinction between enabling and terminal objectives for Australian VET is that currently any formulation of enabling objectives is left to the discretion of individual providers, indicating there is an unknown diversity – potentially great – of enabling objectives, implicit or explicit, guiding development of learners. If there is such diversity, then graduates are learning different things despite apparent convergence on common terminal objectives. If Australian VET is productive of variable quality of graduates, then it may well be because not enough attention is paid to rigorous formulation of enabling objectives.

Learning environments

The assumption that that formal VET provision is sufficient to develop competency reflects a broader assumption about the efficacy of formal education that has been under attack for decades. During the second part of the 20th Century research on learning increasingly called into question the efficacy of formal education and training endeavours. For at least 700,000 years humans have been engaged in skilled activity (Parfitt, et al. 2005), and during that time have successfully passed on these skills to new generations. In other words, for the great majority of human history, competency been successfully developed without any formal education and training arrangements. The first formal educational endeavour known in any detail was Plato's Academy, a school based in ancient Athens designed to train future leaders. This was about 400 BC. In his book *The Republic* (Bloom, 2016) – arguably the first ever curriculum framework – Plato argued for a formal education that required withdrawal from the world and development of abstract thinking through the study of bodies of knowledge such as mathematics, astronomy and philosophy. This model was adopted by the Romans for educating elites and then conveyed into Christian Europe where it became the model for the first universities and then public schools (Hamilton, 1991). With the industrial revolution mass education was introduced and the curriculum for these schools tended to be based on either the academic or vocational model or, in rare cases, a mix of the two. That is, young people

were either prepared for leadership and professional roles with public accountability and responsibility or were prepared for occupational roles in the new industries.

What this snapshot of the history of education and training shows is that formal training for most occupations has been the exception rather than the rule (Billett, 2011). It is reasonable to assume, however, that the formalisation of vocational education and training is a sign of progress and that early human history should be no guide to how we should pass on skills in the contemporary world. Yet research and theory have raised doubts about this supposition. A range of disciplines have investigated the processes underlying education, training and learning, yielding insights that suggest formal education and training have limited scope to promote learning, and that learning outside formal contexts is more sophisticated than originally assumed (i.e., that learning in non-formal contexts is not simply a matter of 'doing' or a completely unstructured activity).

In terms of limited efficacy of purely formal education and training environments, research highlights constraints at the level of content and of methods. The content question has been researched under the heading of 'curriculum' discussed earlier. Importantly, differences have been observed between what are often termed the 'intended', 'taught' and 'experienced' curriculum (Schubert, 2008). Intended curriculum (also labelled the 'official' curriculum) refers to all those goals, aims, outcomes, objectives and content that are formally agreed at a high level to constitute what should be delivered through any education and training process. In the case of VET, training packages and the competency standards within them describe the ultimate outcomes of curriculum. However, research indicates that a difference is regularly observed between what is intended and what is actually taught or delivered as indicated in research by Ben-Peretz (1990), Sherin and Drake (2009) and Hodge (2014). That is, teachers and trainers consistently put their own spin on the intended curriculum creating a gap between intended and taught curriculum. As Sherin and Drake (2009) explain, educators can leave out components of the intended curriculum, or they might modify or add something new. Such omission, modification and addition was found by Hodge (2014) in the context of Australian VET. A difference between intended and taught curriculum is endemic across sectors, systems, nations and times, leading to the conclusion that such difference is inherent in education and training systems as such. Regardless of whether this difference is described and addressed in terms of 'slippage' or 'deviation' or the amount of additional resources developed to support closer alignment of intended and taught curriculum, this difference may be impossible to eradicate. Another difference observed in research is that between taught (also termed 'enacted') curriculum and experienced (or 'learned') curriculum, or the differences between what a teacher or trainer hopes to convey to learners, and what the learners actually acquire through the experience. Recent advances in our understanding of the learning process prompt us to expect learners to give their own interpretation to a given experience of education and training, leading to significant diversity of outcomes. Any diversity of learning that undermines the aims of intended and taught curriculum can be managed to some extent by assessment processes. These may serve as a 'gatekeeper' ensuring some convergence of learning outcomes by returning learners to back to education and training if their own interpretations are too wide of the mark.

Apart from difficulties observed in ensuring consistent delivery of content, research into methods of delivery also raise questions about the effectiveness of formal education and training. Formal education and training are distinguished by a separation of processes of acquisition and application of knowledge and skills in relation to learn goals. While there are some goals that can be effectively pursued under this model – for example, mastering mathematics – others are more difficult to master in this way. Vocational education and training is especially vulnerable to the separation between acquisition and application necessitated by formal delivery models since application is very difficult to emulate in a formal setting. Simulation technology is quite advanced in some industries – such as

health and aviation – but costs are high although justified by unacceptable risks involved in close coupling of acquisition and application (e.g., practicing on real patients).

Potentially, then, moving to formal education and training as a way to pass on valued skills and knowledge is not necessarily a mark of progress, but may actually be going against the grain of our natural tendency to learn effectively in the rich context of valued social practices such as occupations. Study of curriculum highlights inevitable disconnects as intentions are interpreted and enacted, then experienced and further interpreted by learners. Another piece of the learning puzzle has been supplied by anthropologists who have demonstrated the effectiveness of social practices as a site of learning. What these lines of research suggest is that we do not have strong grounds for confidence in formal education and training to pass on occupational competency in its entirety. For example, anthropological research into learning in traditional societies shows that humans have developed processes for passing on knowledge and skills in the context of organised, valued endeavours such as clothing manufacture, food preparation and midwifery. Jean Lave and Etienne Wenger demonstrated through their case studies that learning is a product of committing to a recognised social enterprise or 'practice', such as tailoring or midwifery (Lave & Wenger, 1991). A 'newcomer' to such an enterprise was found to be given low-risk tasks at the 'periphery' of the practice where 'old timers' could monitor their progress toward 'full participation' in the community organised around the practice. The 'community of practice' was the repository of knowledge and skills pertaining to the practice, but also constituted a social structure with hierarchies, power relationships, and ways of behaving or 'identities' intrinsic to the practice. 'Learning' in such a setting was bound up with being inducted into the ways of the community, acquiring an identity as a practitioner of a certain kind, and committing to the mission of the practice. The learning itself was found to be generated by a combination of a 'learning curriculum' and 'teaching curriculum'. The teaching curriculum was the set of methods and content passed on by old timers, generally following a tradition of teaching specific to that practice. The learning curriculum, on the other hand, was constituted by the powerful structuring effects of the practice as a whole. The processes, relationships, materials, equipment and values that make up the everyday reality of the practice create pressures and opportunities to learn and develop in certain ways, adding up to a distinct learning environment. This natural 'learning curriculum' would be experienced in addition to the 'teaching curriculum' that appears as the explicit form in which knowledge and skills are passed on. Research such as Lave and Wenger's clarify how sophisticated learning can be experienced outside formal contexts. At the same time, such research strongly questions assumptions about the reach of formal learning.

Researching a focus on learning

The conceptual analysis presented above raises a host of questions about the actual practice of Australian VET in relation to learning. Questions emerge about development of competency, curriculum, enabling objectives and the efficacy of learning environments. Although some guidance can be taken from arguments such as the potential value of making development a more central part of official thinking on VET, it would always be necessary for stakeholder positions on these questions to be gauged. Stakeholders are fundamental to the success of any change, therefore investigating stakeholder perspectives on the principles in question can give us an idea of how proposals for change would be understood and received. Obviously, interest in stakeholder perspectives has to contend with the difficulties posed by a large, diverse field of stakeholders with vastly different levels and kinds of understanding about VET and adult education. In the case of the analysis presented above it was considered appropriate to test some of the associated propositions to obtain a sense of their resonance with a group of stakeholders that could be readily accessed by the sponsor and researchers. Ideally, a robust qualitative phase of research would complement what is presented below, but resource constraints and onset of the COVID-19 pandemic ruled out this kind of data collection and analysis. However, it was cost-effective and practicable to conduct a survey to gather stakeholder views on the ideas of this project.

Our analysis of principles and assumptions prompted the following conclusions:

1. Australian VET practice operates a in binary between competent and not-yet-competent thus potentially overlooking the developmental features of the path to the level of performance and ready transfer stated in the legislated definition of competency. To bring the focus back to learning, we could work with the implications of the developmental nature of competence.
2. Australian VET practice can be characterised by a focus on competency standards (occupational outcomes) and a lack of national curriculum thinking resulting in each RTO developing their own resources with potentially widely variable learning outcomes. To bring the focus back to learning in VET, we could renew our appreciation of the importance of VET curriculum or enabling materials that can help underpin curriculum.
3. Formal VET programs undertaken in registered providers have become the primary approach to developing competency, a situation that conflicts with what contemporary research into learning tells us is the way people become competent. To bring the focus back to learning in VET, we also need to clarify and formalise the role of workplaces in a process that legitimately includes contributions from providers and workplaces.

To gain a sense of perceptions of issues connected with these conclusions, we surveyed system stakeholders, focusing on those closest to Australian VET training and assessment practices. Stakeholders such as trainers, assessors and provider leadership, for example, ought to be well-versed in the realities of the processes and dynamics of learning in the sector. As such, VET practitioners and others involved in the everyday realities of learners and learning should already be aware if learning is less than optimal in our system. We assumed they would be able to reflect on statements capturing elements of our analysis with a view to estimating the relevance of that analysis as an account of deeper challenges of learning in VET.

To raise the topic of developmental stages, the Dreyfus model (novice, advanced beginner, competent, proficient, expert) was taken as the starting point. Because 'competence' is such a loaded label, and to simplify the framework for use in a survey, we trialled a four-stage model – and to avoid confusion we skipped the stage referred to as 'competence'. The levels that emerged were a level of essential skill development, expanding skill development, maturing skill development and

expert skill development. These labels were tested with a small number of VET and industry insiders before use in the survey.

There were six main questions in the survey (each with multiple items and a free response option), covering broad topics including development of competency, curriculum in VET and the roles of providers and workplaces in VET learning and assessment (see Appendix A for the full survey). The survey itself was constructed using the LimeSurvey platform, with ethical clearance obtained through the Griffith University Human Research Ethics Committee (Approval number 2019/1015). The survey was distributed openly through Australian VET networks from April to October 2020. Overall, 568 responses were gathered, with 450 deemed ‘complete’ for purpose of quantitative analysis. Two of the questions in the survey were highly exploratory and returned inconclusive results. The data from these additional questions is not considered in this report.

The survey collected both quantitative and qualitative data. For each main topic covered by the survey, respondents were presented with statements and invited to respond to Likert-type scales and given the opportunity to add comments in an open text field. A limited number of comments were made by respondents, although the information provided offers important insights into the topics raised in the survey. Data from each question is summarised and interpreted below.

Survey results

The first questions collected basic details on the respondent’s main VET role and location. They were asked to select one category they ‘mainly identify as’, the categories being ‘Employer’, ‘Training Provider Management’, ‘Trainer or Assessor’ and ‘Student or Graduate’. An ‘Other’ option as available with respondents invited to name their role in an open text field.

	Frequency	Percent
Employer	21	4.7%
Training provider management	120	26.7%
Trainer or assessor	220	48.9%
Student or graduate	10	2.2%
Other	79	17.6%

The second demographic question asked respondents to select a category to represent where they were ‘primarily located’. These categories were ‘Remote’, ‘Regional’, ‘Metropolitan’ and ‘City’.

	Frequency	Percent
Remote	18	4.0%
Regional	224	49.8%
Metropolitan	127	28.2%
City	81	18.0%

In the analysis that follows, these demographics need to be taken into account. In particular, note that 75.6% of respondents were involved in provision of training. Further, across respondents there was a split of city/metropolitan and regional/remote locations, leaning toward regional/remote (53.8% compared with 46.2% city/metropolitan).

Development

The first substantive question contained two items, prefaced by the statement,

Research suggests that learner performance develops through stages, such as from novice to expert. However, VET currently recognises two stages of performance: 'competent' or 'not yet competent'. In this section we would like to know what you think about stages of developing learner performance.

Respondents were asked, 'Do you agree with these statements regarding stages of learner performance?', the first statement being 'Learner performance does develop through different stages'. Respondents were presented with a standard five-point Likert-type scale, with the options of 'Strongly disagree', 'Disagree', 'Neutral', 'Agree' and 'Strongly agree' offered. This scale was used for other questions and will be referred to the 'standard five-point scale' in what follows. A second statement in this section was, 'Our VET system should recognise different stages of learner performance', with respondents presented with the standard five-point scale. Table 1 presents responses to these two statements:

Table 1. Stages of performance development

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Question 1:					
Do you agree with these statements regarding stages of learner performance?					
a. Learner performance does develop through different stages	2.9	1.6	5.6	45.3	44.7
b. Our VET system should recognise different stages of learner performance	3.3	7.1	13.6	37.3	38.7

: Numerical values in Tables are percentages

Results from this first section indicate clear agreement with the idea that performance develops through stages. Although there was strong agreement with the idea that the VET system should recognise different stages, it is noteworthy that agreement was lower for this suggestion than the basic idea that performance develops through stages (90% agree or strongly agree versus 76%, a difference of 13%).

The second question in the first section of the survey included four items. The question was prefaced by the statement,

If the VET system were to recognise different stages of development, there is the question of how many stages would be useful to recognise on the way to developing learner performance.

Following on from this statement, respondents were asked 'Would it be useful for VET to recognise the following stages', those four stages being, 'A stage where a person learns about essential work knowledge and skills', 'A stage where a person expands their work knowledge and skill confidence', 'A stage where a person has mature work knowledge and skills' and 'A stage where a person has expert work knowledge and skills.' Responses are set out in the table below:

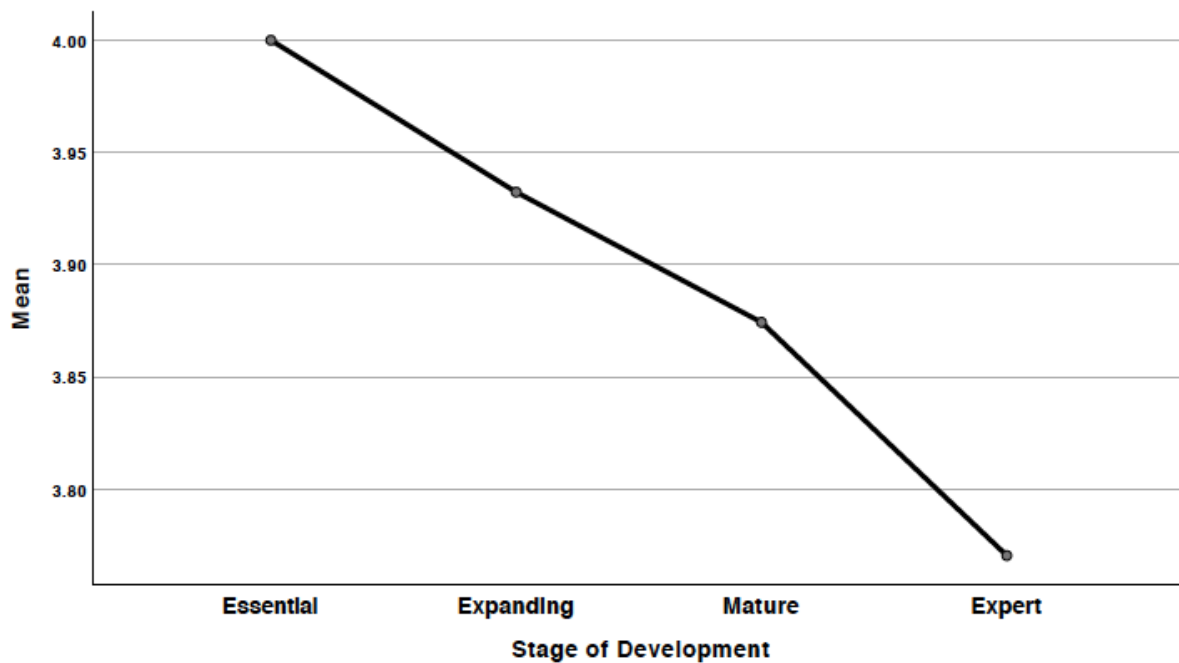
Table 2. Recognising developmental stages in VET

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Question 2: Would it be useful for VET to recognise the following stages?					
a. A stage where a person learns about essential knowledge and skills	4.2	4.7	12.4	47.1	31.6
b. A stage where a person expands their work knowledge and skills confidence	4.7	5.6	13.8	45.8	30.2
c. A stage where a person has mature work knowledge and skills	4.4	7.1	15.6	44.2	28.7
d. A stage where a person has expert work knowledge and skills	5.8	10.4	15.6	39.3	28.9

: Numerical values in Tables are percentages

A Friedman's ANOVA was conducted to compare mean ranks across each of the four stages of development and showed a significant difference overall, Chi-square(3) = 15.84, $p = .001$. Post hoc analyses using the Wilcoxon signed-rank test (with Bonferroni correction) revealed that respondents rated the degree to which VET should recognise a stage where a person learns about essential knowledge and skills significantly higher (in terms of mean rank levels) than a stage where a person has mature work knowledge and skills ($Z = -3.22$, $p = .001$) and a stage where a person has expert work knowledge and skills ($Z = -4.83$, $p < .001$). However, no significant difference was found between essential and expanding stages of development. Moreover, a stage where a person expands their work knowledge and skills confidence received a significantly higher mean rank level than individuals with expert work knowledge and skills ($Z = -3.69$, $p < .001$), though no significant difference was found between expanding and mature stages of development. Furthermore, a stage where a person has mature work knowledge and skills received significantly higher mean rank levels than a stage where a person has expert work knowledge and skills ($Z = -3.08$, $p = .002$). A plot of the ANOVA test helps to visualise the way responses were distributed:

Figure 1: Comparison of mean ranks in Table 1 using Friedmans's ANOVA test



So, although the relevance of all stages was acknowledged by respondents as a group, the higher the level of development toward expert, the less value there would be for VET to recognise it.

Optional open text response fields in this section allowed respondents to comment on the questions. An average of 15% of respondents took the opportunity to add comments across the survey, allowing closer attention to the issues and thinking processes prompted by the questions. 132 comments were made out of 552 survey attempts. Comments clustered around several qualitative themes as follows.

Competency is the first step

A common theme was that 'competency' denotes an early phase or platform for further development.

Competency is not mastery but is the first step in the training journey.

Another comment suggested VET should focus on earlier stages of performance:

I personally don't feel it is the role of VET to be able to deem someone an "expert" level of any job role. Personally I feel that level of skill and knowledge comes from many years in a job role, potentially over multiple workplaces, though I also believe that people are capable of reaching "expert" level in their role through various other ways that may take less time. I believe VET's role is to ensure learners are able to work safely and effectively in the workplace. i.e. they are competent.

The role of employers in development was also indicated:

It is important that as a student in a traineeship or apprenticeship that the student is recognised as in their learning phase - once competent they may be signed off - they can meet the assessment outcomes but still require the on-the-job practice to be proficient and then to earn more. Employers support them through that learning phase.

Comments within this theme tended to equate the work of RTOs with achieving and recognising competency as an early, but not beginner, level, and workplaces as the environment for reaching higher levels of performance.

AQF levels reflect stages

Another common point was that AQF levels, or certificate levels, already incorporate the developmental stages idea:

To me the AQF is the framework for different stages of learner development & performance.

Another comment specified performances associated with AQF levels

In a way the AQF captures the above with standard levels. These produce work ready students on a position scale e.g. operational staff, supervisors, managers. Even so, the stages can also be within a qualification itself. For example, a hairdresser may learn simple hair styles before they tackle more complex ones later on.

The idea was also expressed in terms of qualification levels:

Our VET system currently has this system in place, we call them certificates/diplomas. These already implemented stages address the issue you are asking about. The problem is prerequisites were removed so novice people can do professional level training and pass without knowing the basics or full understand what they are doing due to lack of development over time.

These comments reflect an understanding that the whole system with its AQF levels reflected in units of competency, skill sets and qualifications is geared to development rather than the idea that each unit is an occupation outcome in its own right requiring performance on the job. However, it is not typical for individuals to progress through the VET system by AQF level in a methodical way.

Graded assessment would improve the system

I think a grading system would reflect the skills and knowledge of each student rather than competent/not competent.

Comments in this theme often reflected on the progress of the system itself:

Norm referencing is better suited to training in the trade area, since working in the VET system since 1990 competency-based training has dumbed down and down even more with NO higher-level thinking skills.

Some comments in this theme related graded assessment with employer needs and higher learner motivation:

A competent only grading does not award and encourages excellence and the desire for students to try that bit harder to be the best they can be. It would also help future employers to get some distinction between job applicants based on their performance in their studies.

Another respondent wrote,

Introduction of CBT removed the opportunity for employers to see who was the credit/distinction student, employers want to know, yes, the student has the skills & knowledge, but they still ask for which student can do it better. Removal of graded assessment also demotivated students who would normally go that bit extra to achieve a credit or distinction result. With CBA, these students said, why bother, it doesn't change the outcome on the Statement of Results. I get the same pieces of paper of everyone else in the course.

This theme emerged from clearly articulated positions, suggesting a distinct sub-group of respondents dissatisfied with the current, competent/not yet competent system.

Development is personal

A smaller theme, but one of significance to the research, concerned the idea that development is personal or idiosyncratic:

Performance is not always linear - often development and skills improvement is in different areas or different sequence.

Another comment elaborated:

I agree that learning does develop and grow with time and practise; however, 'stage' models can be problematic, in my view, because they are human constructs. Students rarely fit neatly into one stage or another, and neither do they achieve a qualification and exit a program as an 'expert'.

The personal aspect of development was noted in another comment:

It is very difficult to "categorise" the stages of learning performance as competency differs from individual to individual! In a very different and changing learning environment systems must adopt a flexible and adaptable identification of categories!

This theme acknowledges the diversity of learners and their journeys and undermines the idea that stages could be accurately specified.

The system is complicated enough as it is

The final discrete theme identified was about the practicability of a staged approach to competence given the current system.

The balance here is what is practical. Documenting incremental development can be onerous for a training provider.

Some comments in this theme indicated that a staged approach could be mis-applied:

The system currently struggles already with being able to define a learner as "competent" or "not competent" due to "wishy washy" assessment requirements that are at times too broad and unclear. Adding levels to reflect the stages of performance would be an added layer of complexity that I personally think would cause more confusion than benefit.

In a related comment, the point was made that introducing stages would lead to inconsistency:

If we need to assess a student knowledge and skills through various stages how do we do this in a structured and systematic manner such that any assessor can review a student assignment and reach a consistent conclusion about capability. Having various stages will result in varied and disparate/inconsistent results.

This theme points to pragmatic challenges in modifying the system to be more focused on development despite the high levels of agreement that this is the way the system should move towards.

The next section of the survey addressed the topics of enabling objectives, curriculum (and assessment) resources to support development of competency. The leading statement for this section was:

To guide their training work, RTOs often rely heavily on the information contained in units of competency. However, units of competency state the final outcomes of a VET program and do not describe the steps on the way. In this section we ask what, if any, additional information should be made freely available (without cost) to RTOs.

Enabling objectives

The first question on this section asked in relation to this statement was whether ‘In addition to units of competency that describe final outcomes, intermediate or enabling learning outcomes should also be available.’ Respondents were presented with the standard five-point scale. Responses were:

Table 3: Level of agreement with formulation of enabling objectives for units of competency

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Question 3:					
...					
a. In addition to units of competency that describe the final outcomes, intermediate or enabling outcomes should be available.	5.6	8.4	21.6	36.4	21.6

: Numerical values in Tables are percentages

As this table shows, 58% of respondents agreed or strongly agreed. Although the majority of responses fall on the side of including intermediate outcomes alongside the standard statements of final outcomes, a substantial number remained neutral with a low percentage actually disagreeing.

Curriculum

Within this section, four other questions were posed about what other resources, apart from units of competency, should be provided to support RTO training work, with standard five-point scales presented to capture responses. Participants responded to four statements in this part of the survey: Curriculum or training resources should also be freely available; Assessment resources should also be freely available; Curriculum or training resources should be nationally consistent; Assessment resources should be nationally consistent. The table below summarises responses:

Table 4. Availability of free and/or nationally consistent curriculum and assessment resources

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Question 4:					
...					
a. Curriculum or training resources should also be freely available	2.4	3.8	11.8	37.1	38.4
b. Assessment resources should be freely available	2.9	4.7	11.3	34.4	40.2
c. Curriculum and training courses should be nationally consistent	3.8	8.2	12.9	23.6	45.1
d. Assessment resources should be nationally consistent	3.8	7.8	11.1	24.9	46.0

: Numerical values in Tables are percentages

At 75.5%, clear agreement is evident that curriculum or training resources should be freely available. The next question was whether ‘Assessment resources should also be freely available’. With 74.6% of respondents agreeing or strongly agreeing, there is clear support for the proposition about assessment resources. The last questions in this section were about consistency of curriculum and assessment resources. In terms of consistency, then, 68.7% of respondents agreed or strongly

agreed that curriculum or training resources should be nationally consistent and 70.9% agreed or strongly agreed that assessment resources should be nationally consistent.

Respondents made 87 open text responses to the sections on enabling objectives and curriculum which are grouped around a number of themes as follows:

Enabling objectives would complicate

While some references to enabling objectives were positive, and in particular highlighted the benefit of relating them to formative assessment, most respondents were wary. The bulk of concerns were about adding further complexity to the system:

I think the ability to assess enabling outcomes would be very difficult and create an extra layer of validation and monitoring of these. The use of pre-requisite units to deliver intermediate or enabling outcomes would be more useful.

Comments also referred to increasing the information load in the system:

There is too much information in training packages and units of competency already. We don't need more. We can come closer to achieving a system of evaluating performance, knowledge etc by allowing a grading system....like we used to use.

Some responses indicated that enabling objectives are implicit in units of competency:

I feel that "intermediate" learning outcomes are implicit in the units. If the PE says to do a task to a particular standard, anything below that is intermediate and an "enabling" step.

Again,

Intermediate and enabling outcomes are often inbuilt in the UoC already. The UoC are wordy enough as they are. VET teachers struggle with them and find them difficult to interpret.

Nevertheless, some comments pointed to the difficulty of making such content explicit:

The first question on 'Intermediate' or 'enabling' learning outcomes should also be available is only required where RTO's, and more specifically their teaching staff, lack the ability to develop learning outcomes for themselves. In our current VET training environment, many if not most Trainers and Assessors are not well versed in the design and development of curriculum, and even less in the development of learning resources, and as such require support to achieve a consistent training outcome.

One comment in this vein specified the difficulty of enabling objectives for trainers:

Current units have more than enough content in them - it would be too difficult to develop and deliver training if you had to consider intermediate learning outcomes as well.

Comments in this theme converge on the idea that enabling objectives would be problematic for the system, although the reason why this would be may be worth pondering.

Wanted this for years

A division could be detected between those who embraced the idea of national curriculum and/or assessment resources, and those who were concerned that the flexibility of the system would be compromised. A large number of comments were supportive:

If I could agree more strongly, I would.

Some in this vein offered reasons for support:

If everything is the same, we will have stronger Australian industry sector.

Of the numerous comments supportive of nationally consistent curriculum and/or assessment resources, several drew attention to the duplicated efforts of multiple RTOs developing their own resources, or 're-inventing the wheel' as it was put:

I think if we are really looking to make some changes, we need to look at the development of Training Resources and the enormous amount of time and money spent on developing these. Every RTO across Australia, including private and state funded RTOs develops their own and if we had explored the real cost of this in terms of hours in development, mapping etc, there is a huge amount of replication. Everyone is re-inventing the wheel, there should be consistency in the resources used to train.

A clear sub-theme involved support for national curriculum and/or assessment resources because it would reduce inconsistency due to diversity of interpretations of units of competency:

Training Packages are a national framework, yet every RTO takes their own interpretation and creates their own learning and assessment strategies, materials, instruments & tools. So different outcomes are achieved, but it's the same qualification, this is concerning.

Need a flexible system

Many objections to the idea of nationally consistent resources concerned the threat to system flexibility:

Whilst it would be very helpful to have access to training and assessment resources, national consistent resources would severely restrict an independent RTO's ability to contextualise resources. Assessors with current and extensive vocational competency can add significant information/insight which could be restricted with national prescriptive training and assessment resources.

These concerns were in relation to different dimensions. There was concern that national resources would not take into account learner diversity:

It is difficult to have nationally consistent training resources and assessment due to the different learner cohorts and regional needs and contexts. For example, to have training materials for BSBWHS307 it would depend what context this was being delivered in (could be in a range of different qualifications) and the needs of the learner. Making these consistent would remove all flexibility and in essence, not meet one of the Principles of Assessment. Perhaps there could be base line resources to be built upon.

Regional diversity was a concern for other respondents, too:

RTO's should develop resources based on the requirements of the region and have the opportunity to excel and so attract other students due to their use.

Other concerns specified workplace and industry diversity:

Assessment resources that are nationally consistent would not have enough flexibility to work in all work situations. There must be scope for RTOs to build assessment tools that work in unique situations.

National consistency with scope for customisation

A large number of comments accepted the principle of nationally consistent curriculum and/or assessment resources on the proviso that their use would not be mandated:

My concern here is if resources were mandatory. Whilst this would allow consistency it takes away a very important aspect that supports students in learning and that is the autonomy and therefore motivation of the teacher.

Other comments suggested national consistency with an element of customisation would be appropriate:

If training material was consistent at a national level with room for a % of situational contextualisation we would be using our time more efficiently and able to spend more teaching time with individual students.

Nationally consistent materials could potentially reduce fraudulent training activities as described by this comment:

Agree if all have to use, point in case: recently had conversation with employer wanting to know why it takes us so long to deliver training to his student, an opposition offers the same outcome whilst offering the training 20% of the time we do, using the same resources assessments may reduce some RTOs short cutting the training outcomes for students/Industry.

Sharing resources

While many respondents supported the idea of nationally consistent resources, a few identified additional possibilities:

Assessments and training resources should be tailored to meet local needs, while still being able to meet minimum curriculum requirements. There should be a bank of material that could be accessed and adjusted to meet local needs.

Another comment indicated the value of a 'clearing house':

You cannot have nationally consistent materials/resources/assessments to cover the variety of learner industry needs. Nor should such resources be free (nothing offered free is valued and you'll just create an environment where someone will write resources that are never used). BUT: there should be a 'clearing house' system where RTOs can lodge resources and other RTOs can purchase them for adaptation.

Consistency would reduce competition and quality

A few comments focused on the threat to competition and quality posed by nationally consistent resources:

I would consider the development of resources and assessment processes a potential area of competitive advantage for training providers and as a component of their core business a responsibility of theirs individually. A regulatory body may provide some framework or direction around minimum standards for this but if they were to provide prescriptive resources few training providers would strive to deliver training to a higher standard.

Some responses pointed to other quality threats:

Each state could have their own resources and share them around the borders. However, if all RTO's have the same learning material and the same assessments then there is very little competition and the ability to cheat by students is far greater.

This comment reflects problems with the system. It is possible to cheat on a knowledge test but is not possible to cheat on individual competency. You can either perform the functions described in units or if not, further development is needed. You can't cheat on competent performance.

There was broadly support for availability of nationally consistent resources, or maintenance of a resource bank, with scope for customisation. Flexibility to take into account learner, regional, and industry diversity was a clear message.

Learning environments

The next section raised the question of the degree of involvement of the workplace in training and assessment. The statement leading this section was,

Except for through apprenticeships and traineeships, workplace contributions to training and assessing VET students is minimal. This section asks you about greater workplace involvement.

Respondents were asked to ‘consider the role of workplaces, and record a response using the standard five-point scale detailed earlier against two propositions. The first was, In general, workplaces should take a more direct role in training, and the second, In general, workplaces should take a more direct role in assessment. Responses are summarised in the table below:

Table 5. Role of workplaces in training and assessment

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Question 5: Consider the role of workplaces and record a response for the following statements.					
a. In general, workplaces should take a more direct role in training	3.1	10.0	14.7	40.2	24.4
b. In general, workplaces should take a more direct role in assessment	10.9	20.4	25.1	25.1	10.9

: Numerical values in Tables are percentages

At 64.6% agree or strongly agree, respondents were clearly supportive of the proposition that workplaces should be more involved in training. However, with only 36% of respondents agreeing or strongly agreeing with the related proposition about assessment, there appears to be some reticence among the respondents regarding greater workplace involvement in assessment.

142 open text responses to this section grouped around a number of themes as follows:

Workplace a valuable learning environment

The comments very frequently acknowledged the value of the workplace as a VET learning environment. A comment typical of this theme is “In general, workplaces should take a more direct role in training”. Several comments elaborated on this insight:

As qualifications are supposed to provide skills development, how can this truly occur without a work placement involved. Feedback I received recently whilst undertaking an industry consultation for Certificate II in Community Services, the employer stated that they thought there should be a placement component so that a candidate can see what actually happens in the work environment, as opposed to just theoretical. I have to say, I totally agree! My previous working life before coming into the VET sector, I worked in a corporate environment, and the amount of people working with qualifications but absolutely no experience is frightening.

Another comment in this theme illustrated the strength offered by this environment;

A work placement gives the perfect opportunity for the students to learn on the job and practice in realistic real-life situations. A workplace mentor will be able to see the student

undertake a workplace activity in a real-life situation with many variables. I often think of an employer or workplace supervisor being in the ideal situation to decide if they would actually employ this person as they consider them 'competent' in the work function and feel that would give a great amount of value to a final judgment of competence.

Some comments struck a cautious note whilst remaining positive:

Without placing too much burden on employers/workplaces, their involvement in training and assessing (in partnership with RTOs), would potentially provide a broader training experience, providing opportunities for practical application of the learning and a more robust and authentic assessment. Perhaps only larger organisations may be in a position to participate in training and assessment.

Uneven capability and capacity

Building on the last comment, a large number of comments expressed concern about the capability and/or capacity for some workplaces to create an effective learning environment.

This depends VERY MUCH on the quality of those in the workplace who are delivering and assessment. I have seen the good the bad and the ugly.

General system awareness was considered an issue by some respondents:

Generally, workplace employers do not have a clear understanding of the VET system and what is involved. How to get workplace employers more involved is a continual struggle.

Some comments raised concerns with regard to training skills:

Workplaces in Australia generally lack supervisors and workplace mentors that have pedagogical capacities. The workplaces should be able to follow the training package requirements where possible to link the workplace outputs and tasks to the learning. "doing" is "linked" to the "doing".

Others focused in on the challenge of interpreting competency standards:

Workplaces should train more, if what they are doing is consistent with the competencies that have been written. Often a workplace will only be doing 30-50% of what is covered in a unit of competency to complete a task which may be described by the competency. If workplaces want to train to competency standards, then that is what they need to do. First and foremost, they need to be able to read and understand the units of competency and understand that NOTHING in them is optional.

‘Leave assessing to the assessors’

One theme related specifically to assessment, and the great majority of comments that touched on assessment expressed concern about involving workplaces to a greater extent in the process.

Characteristic of this theme is the remark,

I do not think the industry should be assessing unless they have had the skills in assessing as this makes for auditing difficulties, we can have employers sign off on assessable elements that is in the best for the company not the apprentice RTO are there as they have the assessing skills and trade experts. Trade need to be more involved with the training definitely but not the assessing. this takes time to learn how to assessor correctly and be compliant so yes need workplace or apprentice/traineeship in place to train and refine their learnings but leave the assessing to the qualified assessors.

Comments in this theme often focused on the problem of objectivity of assessment: “The employers will have a level of bias/conflict of interest. Assessment must be independent”. Another comment elaborated:

Unless staff are trained in assessment, they don't have the skills and knowledge to assess students. They may also be swayed by a relationship with that student from their workplace interactions, rather than having an unbiased approach to assessment.

Other respondents highlighted the level of skill required to undertake assessment in the system:

I do not think the industry should be assessing unless they have had the skills in assessing as this makes for auditing difficulties, we can have employers sign off on assessable elements that is in the best for the company not the apprentice RTO are there as they have the assessing skills and trade experts. Trade need to be more involved with the training definitely but not the assessing. this takes time to learn how to assessor correctly and be compliant so yes need workplace or apprentice/traineeship in place to train and refine their learnings but leave the assessing to the qualified assessors.

Learning environment limitations

A specific concern about greater workplace involvement in training was that some workplaces cannot equip learners with the breadth of experience required to develop competency. This potential narrowness was described in terms of a problem of transfer:

Workplaces - may deliver specific training and not meet broader transferable competencies/skills/knowledge.

Another comment elaborates this point:

I think workplaces do spend a fair bit of time teaching their students' things relevant to the workplace but it is "this is how we do it" which may not necessarily be the best way and current way of doing things.

The limitations of some workplaces as a learning environment was specified in some comments:

Employers do not have the time for training and assessment students need to go to a training facility away from their normal workplace as not all workplace's produce all of the required products that are required to be deemed competent according to the training package.

Disincentives to contribute

While the value of the workplace for development of competence was widely acknowledged – subject to some caveats – a number of respondents drew attention to the range of disincentives to workplace involvement:

Workplaces are attempting to provide a viable business, which enables employment opportunities. The training costs add to the product costs in the long run. While some workplaces encourage and support training whole heartedly, many feel it as an imposition, or non-profitable liability.

Some comments focused on the time factor:

Workplaces are busy with the role of business. They are time poor. Some do not have the expertise within their businesses to take on training and assessment. Training and assessment should remain in the domain of the training provider.

Others presented the case in stark terms;

People rotate jobs every 2 -3 years and many leave the industry they have been trained to work in how can you make industry carry the cost or burden of this. In apprenticeship employers receive a wage reduction to offset the cost of training. If a student is studying and not attached to a workplace how can you expect that a workplace fund this training?

Another comment that indicated how to overcome the disincentive explained that,

...as students need to get this training in the real world, we should be prepared to pay the workplace for their time and effort.

A related comment indicated that incentives could be directed to skilled workers:

Recognise the industry person for what they bring to enhance and expand the learning, don't make them jump through hoops by saying they must have a TAE. Pay them for the sharing of their expertise and craft.

On balance, the themes reflect general support for greater workplace involvement in competency development although the picture is complicated by specific concerns around involvement in assessment and about the scope of workplaces to offer the range of experiences necessary. Disincentives to workplace involvement were identified, along with measures to overcome this challenge.

Discussion

This study has been concerned with analysing assumptions about development, curriculum, enabling objectives and the role of workplaces in learning in Australian VET. For good reasons, competency outcomes have been a major emphasis in the reformed system over the last 30 years. They have become the focal point of industry involvement, manifesting in the formulation of units of competency organised into industry-specific training packages. This emphasis has been heightened by funding policies and auditing practices that themselves take units of competency and training packages as a reference point for their activities. At the same time, a topic of fundamental importance to any system of vocational education and training – learning as a developmental process – has been relegated. This is an understandable situation. No VET stakeholder would say learning is unimportant. But it has been set aside as a matter to be pursued by the thousands of providers and many more thousands of trainers as they see fit. The situation is understandable because a system that is clear about its outcomes, and which requires providers and trainers to work with learners toward them, should expect the learning process to consistently tend to those outcomes. The system is designed around the concept that with the ends secured; the means should look after themselves. While it is not in the scope of this study to question the rationale and evidence for these assumptions, it is worthwhile noting that training and education research and theory, past and present, local and global, offers concepts and perspectives that can help us raise questions about these assumptions. Some of these questions are raised in this study. The study has been pursued as a pilot, analysing relevant concepts and dipping into the field to gauge stakeholder views on them. Specific concepts considered were development, curriculum, enabling objectives, and learning environments. A survey was used to gather quantitative and qualitative data to learn about current views and practices in VET.

Development

The notion of competency as a ‘quantum’ is influential in Australian VET, sitting behind the competent/not competent binary that shapes practice in many learning environments. Competency appears, under these settings, to be something one has or does not have. Although no thoughtful VET stakeholder would dismiss the idea that competency must develop and be some kind of journey, there is room to place greater emphasis on this process. Indeed, an imbalance may be perceived in the system between the efforts placed in rigorous national industry endorsed formulation of outcomes, and a lack of rigor in the kind of thinking and efforts required to properly nurture development of competency. Further, a developmental approach goes hand-in-hand with the idea that development is a continuous process. This leads to the concept of a developmental continuum. Put in this way, the problem is to find a balance between a quantum concept of end point competency resting solely in the hands of RTOs and the concept of learning as a developmental continuum involving workplace practice. The quantum concept brings its own benefits, but they may be bought at the cost of proper emphasis on development of workplace recognised competency. The study reported here is concerned with this problem of balance.

To open this idea up, the so-called Dreyfus model of skill development was introduced. This five-stage model was developed for the US Air Force in the early 1980s. The levels in the model are novice, advanced beginner, competence, proficient and expert. The model itself has been refined and applied through research and further theorisation. It has also been subject to sustained criticism, with alternative developmental models proposed. However, we can draw on it in the context of this study as a kind of touchstone or provocation to think about the developmental process. Note that the ‘competence’ stage was removed in our survey design to avoid confusion, while the four remaining labels were expressed in terms of *essential*, *expanding*, *matured* and *expert*

stages with brief definitions that focused on skills rather than the state of the person possessing them (as in the Dreyfus model).

The survey indicated that 90% respondents agreed or strongly agreed that learner performance develops through different stages. This clear result confirms that stakeholders are aware that performance does develop, that development is a real thing. That our system should recognise stages of development was also supported, with 76% agreeing or strongly agreeing that it should. It is noteworthy that the level of agreement dropped when respondents were confronted with the proposition that the system should engage with stages of development. This drop may be indicative of a sense that the idea of development may be problematic in the context of our current system. The survey also presented each of the four labels with brief definitions, asking specifically whether the system should recognise particular stages. This was an exploratory question, which nevertheless indicated that respondents were more comfortable with early stages of development being recognised than, say, an expert stage. It must be noted that all stages met with agreement – consistent with overall responses to the first two questions – but it was significantly higher for the earliest stage.

Qualitative results shed light on the perspectives of respondents on this question of development. A thematic analysis revealed five themes. *Competency is the first step* is the idea that competency is about setting a worker up to perform in a basic way in the workplace and as a platform for further development. Interestingly, this view is in tension with the conceptual analysis which suggested our legislated definition of competency in fact describes a high level of workplace performance. Perhaps stakeholders do not measure their idea of competency against the one embedded in legislation, but rather in a more pragmatic view of what the VET system can achieve. The next theme, *AQF levels reflect stages*, was a common perspective across responses. The AQF framework was frequently cited or stages expressed in terms of Certificate levels. In this view, the system as a whole reflects a developmental approach, with competency emerging as a marker within that system. This theme points to a powerful counterargument, suggesting the system is indeed balanced and embeds development as a core principle. This theme indicates there is scope for debate about the relationship of the legislated definition of competency with different AQF levels. This study took the stance that regardless of the complexity of a task trained and assessed in VET, the legislated definition wholly applies to it. This tension may be useful to explore further. The theme *Graded assessment would improve the system* elaborated a perennial debate in Australian VET, connecting the idea of development with the assessment of it in terms of graded outcomes. This theme may reflect the great importance placed on assessment in the system, and the need for stakeholders to regard the implications of development for the assessment process. A theme with fewer expressions across responses was *Development is personal*. This theme points to a problem of rigidity that could accompany introduction of a model of stages, and indeed reflects criticisms of the Dreyfus model in the literature more broadly. The theme draws attention to the dangers of mandating a structure over the learning process and highlights the great diversity of VET learners, and by implication, the diversity of learning paths they may take to reaching the goal of competency.

Curriculum and Enabling objectives

The concepts of curriculum and enabling objectives are closely related as the broad problem of what to train or teach against the more specific question of exactly what to teach when. The curriculum question – *what* to train or teach, *what* should be learned, but also *what* is left out – is relevant to Australian VET despite defining work outcomes in units of competency. Curriculum in the Australian VET context concerns the work of understanding how to support a person to develop competency as specified in units of competency. As such, in earlier debates about implementing CBT in Australian VET curriculum was sharply distinguished from competency standards with the argument clearly put

that the two should not be confused in practice. This understanding, positions curriculum as a kind of counterpart to development, the thinking and resources that support and guide development toward particular knowledge and skill outcomes. Curriculum concerns the difference between development as such and development as leading somewhere specific and valuable. Enabling objectives comes in here as the focusing and operationalisation of insights about what to train and when in order to channel and signal development toward a goal. Enabling objectives constitutes a topic of interest given that the system has drawn so much from objectives theory, as reflected in the structure of our units of competency. However, the theory itself stresses the distinction between terminal and enabling objectives and considers each to important in achieving the outcomes of training. But in the Australian context it is only terminal objectives that have received attention, resourcing and national consistency. Again, enabling objectives are, along with curriculum, a sort of conceptual counterpart to development. In this case enabling objectives mark the stages along the way, a focus for formative assessment to support learning toward pre-specified competency.

The survey included questions about enabling objectives and curriculum, framed in terms of availability and consistency. Quantitative data on the question whether enabling or 'intermediate' objectives should be made available alongside units of competency garnered basic agreement, with 58% of respondents agreeing or strongly agreeing, although with 21.6% of respondents neutral on this question, it may be that some respondents were wary of the idea or needed more information to be able to form a view. Qualitative responses offered some insight on this point, with a distinctive theme emerging: *Enabling objectives would complicate*. Respondents articulated the view that in an already complex system, another layer of detail would make things unworkable. Some respondents made the point that enabling objectives are implicit in units of competency. Indeed, the theory of objectives looks at the relationship between terminal and enabling objectives in this way. However, the theory also emphasises the rigor required to formulate enabling objectives, since they refer to prerequisite skills and knowledge. Some responses resonated with this point, doubting that all trainers and providers would know how to formulate enabling objectives, even if they are implicit in units of competency. An interesting point was raised by one respondent who explained that it was difficult enough to address the units of competency without having to contend with enabling objectives as well. If this view was widespread it may be worth exploring, more deeply, exactly how rigorously do trainers and providers unpack units of competency so that training really does lead in a systematic way to development of competency. Perhaps if the assumption is widely held that development is intrinsically personal – with many learning pathways leading to the goal – then enabling objectives would hamper efforts to support learning. However, while some learners will already have some or all of the prerequisites to underpin a specific competency (and therefore be ideal candidates for recognition assessment), the path through enabling objectives is not entirely personal since these objectives concern skills and knowledge underpinning competency. These are not personal and are not necessarily diverse.

In relation to curriculum, questions about the free availability of resources resulted in agreement or strong agreement (75.5%). The opportunity was taken to pose this question in relation to assessment too. Here, 74.6% of respondents agreed or strongly agreed assessment resources should be made freely available. Lower levels of agreement registered for questions about whether these resources should be nationally consistent, although agree or strongly agree levels of 68.7% (for nationally consistent curriculum) and 70.9% (for nationally consistent assessment) suggest overall support for the propositions. Qualitative data revealed some nuances that should be considered. Many respondents embraced the idea of freely available curriculum resources, as captured in the theme from the qualitative analysis, *Wanted this for years*. Within this theme the point was stressed that much time and effort is spent by individual providers to create these resources, 'reinventing the wheel' as one respondent put it. A drain on system resources is suggested, with national curriculum

resources a possibility to allow efforts to be directed to other areas. But enthusiasm for freely available resources was tempered by comments which reminded that flexibility is a principle of the system, and that this flexibility could be undermined by nationally consistent resources. Respondents pointed to diversity of learners, regions and workplaces as realities that could be made problematic by national resources. A closely related theme, *National consistency with scope for customisation* offered a solution of sorts, pressing the point any national resources would have to be customisable to meet the demands of a complex and diverse system. A different solution was indicated under the theme of *Sharing resources*, with greater collaboration among providers mooted as an alternative, or even a resource bank or clearing house established so resources could be shared, albeit at a cost. *Consistency would reduce competition and quality* was a final theme from the qualitative data in this part of the survey. Here, a smaller number of respondents highlighted the idea that competition goes hand-in-hand with higher quality, and that national resources would impede competition and potentially adversely impact system quality.

The survey results indicate that respondents are aware of a need for curriculum resources, implying that there is a gap in the system on this point – notwithstanding well-put arguments about the value of flexibility for the system and the need to promote competition. In relation to enabling objectives, further research would be required to determine the capability of trainers, teachers and providers to formulate enabling objectives implicit in units of competency. Further investigation might also be directed to the potential problem of neglecting to specify and use enabling objectives for VET programs. Overall, the survey raises the possibility that the sector could be enriched by a focus on curriculum, while some work may need to be done to make it explicit that competencies mark the end point of development and that the path toward it needs real attention. That attention could take the form of discussion and debate about enabling objectives, specifically in relation to competencies regarded as terminal workplace occupational objectives as distinct from learning objectives that are able to be delivered by RTOs with efficiency.

Learning environments

Literature on learning environments for skill development emphasises the importance of the workplace. Some literature even questions the value of formal training to contribute, although the balance of research and theory finds that formal learning environments offer distinctive benefits. The review presented ideas that suggest that workplace settings, or ‘social practices’, may be a sufficient basis for competency development (considered holistically as integrating identity, skill and knowledge development), while formal environments may skew the development of learners, or leave them with abstract skills and knowledge that are in need of application and practice before they can be viewed through the lens of competency. The survey asked whether workplaces should be more involved in training, with the opportunity taken to ask the same in relation to assessment. 64.6% of respondents agreed or strongly agreed this involvement should be greater, while only 36% agreed or strongly agreed workplaces should be more involved in assessment. Again, qualitative responses shed light on these figures and nuance the picture.

Five themes were derived from the qualitative analysis. The first, *A valuable learning environment* confirmed the thrust of recent research finding the workplace to be a valuable environment for development. Under this theme were comments affirming the proposition that workplaces should be more involved, and numerous illustrations were offered that differentiated the benefits. They included giving reality to student learning, providing more personal guidance, and deepening learning. At the same time, a cautious note was struck. The first theme reflecting this concern was *Uneven capability and capacity*. Here, respondents itemised various drawbacks, describing variable quality of support, lack of knowledge of the system the learner is part of, and lack of training or teaching capability, with questions about ability to interpret units of competency and training

packages also raised. A related theme was *Learning environment limitations*. Several respondents explained that some workplaces simply do not have the range of equipment, materials, contexts or practices necessary for developing the full range of competency. The concern here was not only with meeting assessment expectations set out in training packages, but with the ability of learners to transfer their skills to other workplaces. The caveats were even stronger in relation to assessment, accounting for the lower level of agreement or strong agreement among the quantitative data for this question. Under this theme, *Leave assessing to the assessors*, capability in relation to assessment practices was questioned along with understanding of the system that assessment must comply with. Different concerns were put about bias, with the point made that it might be in an employer's interest for a student to be found competent. Nevertheless, respondents did suggest workplaces can be more involved in assessment, such as by helping gather evidence to make assessment judgements. Finally, the qualitative data analysis produced the theme *Disincentives to contribute*. Apart from questions of capability, capacity, bias and transfer as already mentioned, several respondents explained, from the workplace perspective, why greater involvement in VET would be a challenge. A clear message was that running a profitable business is the core concern of workplaces, and that training adds to business costs. Another message was that workplaces are often time-poor, with training efforts absorbing time. Respondents suggested – outside current incentives offered employers – for employers involved in training more broadly to be recompensed, or individuals providing support to be paid. The disincentives are significant. Of course, research, theory and policy have explored or tried to address this perennial issue.

Conclusion

This study has framed a challenge for Australia's VET system: how to balance a strong emphasis on outcomes with careful, informed, systematic and resourced efforts to ensure learning or development of competency is properly supported. Some issues or questions arose from a conceptual analysis of this challenge. These included the idea that learning goes through stages, and that these stages can be distinguished and potentially recognised, that curriculum needs to be considered separately from units of competency as the reference point for developmentally informed guidance for learning, that enabling objectives have a fundamental role in an outcomes-driven system, and that the contribution of workplaces, as learning environments might be increased to promote competency development.

A survey of over 500 stakeholders, primarily VET trainers and teachers, was employed to gather perspectives on these issues and questions. The survey results show support for the principle of development, with stronger support for earlier stages of development to be recognised by the VET system. Qualitative responses suggested that in terms of stages of development, 'competency' might be regarded as itself descriptive of earlier stages of development, despite the arguably higher level of development reflected in the official, legislated definition of competency as

...the consistent application of knowledge and skills to the standard of performance required in the workplace. It embodies the ability to transfer and apply skills and knowledge to new situations and environments. (Federal Register of Legislation, *Standards for Registered Training Organisations (RTOs) 2015*. <https://www.legislation.gov.au/Details/F2017C00663>)

On this point, further research might be useful to determine what VET stakeholders mean by competency. This question reminds us of one of the arguments from the landmark report, *High level review of training packages*,

If we are to improve the Training Package model, we will have to do more than re-affirm the existing assumptions about competence—we will have to think our way to conceptual and therefore policy clarity. Competence (and therefore competency-based training and assessment) appears on the surface to be a deceptively simple concept but, theoretically and in practice, that simplicity melts away to reveal conceptual complexity.

The Training Package model is underpinned by a range of explicit and implicit assumptions about work, work performance, knowledge and skill, teaching, learning and assessment and qualifications. It is some of these assumptions that are in greatest need of a re-think. (Schofield & McDonald 2004, p. 16)

Potentially, these issues are still characteristic of the system, and potentially impede appreciation of the need to focus on learning in a system of vocational education and training.

Survey results also suggest that there is an appreciation of the value of and need for more attention to curriculum in VET. Curriculum may be considered a necessary counterpart to an emphasis on learning and development. Quantitative and qualitative data highlighted a clear interest in availability of curriculum resources and a sense that energy is lost in the system by leaving curriculum development up to individual providers. This interest was accompanied by a desire to protect the present flexibility of the system to cater for diverse students, regions and industries. Potentially, research could delve into whether units of competency can indeed stand in for curriculum in any situations, and how stakeholders view the relationship between competencies and curriculum in their own settings. Enabling objectives was a related issue posed in the study. The survey returned inconclusive results on this point, with qualitative data suggesting the idea of using centrally sourced enabling objectives would further complicate the system, and that they are implicit

in units of competency anyway. Research might usefully examine how enabling objectives or an equivalent are derived from units of competency, and how they relate to both development and curriculum.

The survey indicated support for the proposition that workplaces could take a greater role in competency development, but qualitative data revealed a complicated picture, with a range of problems identified with greater workplace involvement. This finding might be expected from this group of respondents under current system settings. Further research might not be as useful on this point since several studies have canvassed this issue. However, there is room for principles, policies and regulation to support greater workplace involvement and reduce the onus on providers to take responsibility for complete endpoint competency development and assessment.

References

- Australian Government (2012). *Core Skills for Work Developmental Framework*. Canberra: Commonwealth of Australia.
- Ben-Peretz, M. (1990). *The Teacher-Curriculum Encounter*. Albany: State University of New York Press.
- Billett, S. (2011). *Vocational Education. Purposes, Traditions and Prospects*. Dordrecht: Springer Science & Business Media
- Dreyfus, S. E. (1982). Formal Models Vs. Human situational Understanding: Inherent Limitations on the Modelling of Business Expertise. *Office: Technology & People*, 1, 133-165.
- Dreyfus, S., & Rouse, B. S. (2018). Commentary on Fernand Gobet's (2018) "The Future of Expertise: The Need for a Multidisciplinary Approach". *Journal of Expertise*, 1, 181-183.
- Federal Register of Legislation (2015). *Standards for Registered Training Organisations (RTOs) 2015*. <https://www.legislation.gov.au/Details/F2017C00663>
- Gobet, F. (2018a). The Future of Expertise: The Need for a Multidisciplinary Approach. *Journal of Expertise*, 1(2), 107-113.
- Gobet, F. (2018b). Reply to Dreyfus and Rouse. *Journal of Expertise*, 1(3), 184-186.
- Hamilton, D. (1991). *Curriculum History*. Geelong: Deakin University.
- Harris, R., Hobart, B., & Lundberg, D. (1995). *Competency-based education and training: Between a rock and a whirlpool*. South Yarra: Macmillan Education.
- Hodge, S. (2014). *Interpreting competencies in Australian vocational education and training: Practices and issues*. Adelaide: National Centre for Vocational Education Research.
- Kinchin, I. M. & Cabot, L. B. (2010). Reconsidering the dimensions of expertise: from linear stages towards dual processing. *London Review of Education*, 8(2), 153-166.
- Lave, J. & Wenger, E. (1991). *Situated Learning*. Cambridge: Cambridge University Press.
- Parfitt, S. A., Barendregt, R. W., Breda, M., Candy, I., Collins, M. J., Russell Coope, G., Durbidge, P. et al. (2005). The earliest record of human activity in northern Europe. *Nature*, 438, 7070, 1008-1012.
- Peña, A. (2009). The Dreyfus model of clinical problem-solving skills acquisition: a critical perspective. *Medical Education Online*, 15(1). pp. 1-11.
- Plato/Bloom (2016). *The Republic*. New York: Basic Books.
- Schofield, K. & McDonald, R. (2004). *Moving On... Report of the High Level Review of Training Packages*. Brisbane: Australian National Training Authority.
- Schubert, W. H. (2008). Curriculum Inquiry (pp. 399-419). In F. Michael Connelly, M. F. He, & J. Phillion (Eds.). *The SAGE Handbook of Curriculum and Instruction*. Thousand Oaks: SAGE Publications Inc.
- Sherin, M. G. & Drake, C. (2009). Curriculum strategy framework: investigating patterns in teachers' use of a reform-based elementary mathematics curriculum. *Journal of Curriculum Studies*, 41(4), 467-500.

Smith, E. (2002). Training Packages: Debates around a new curriculum system. *Issues in Educational Research*, 12.

Yelon, S. (1991). Writing and Using Instructional Objectives (pp. 75-121). In L. J. Briggs, K. L. Gustafson & M. H. Tillman (Eds.). *Instructional Design. Principles and Applications (2nd Ed.)*. Englewood Cliffs: Educational Technology Publications.

Appendix. Survey questions

"Demographics" In this section we will ask how you engage most with the VET system.						
	From the list below, what category do you primarily identify as?	Employer	Training provider management	Trainer or assessor	Student or graduate	Other
	From the list below, where are you primarily located?	Remote	Regional	Metropolitan	City	
"Stages" Research suggests that learner performance develops through stages, such as from novice to expert. However, VET currently recognises two stages. Do you agree with these statements regarding stages of learner performance?						
	Learner performance does develop through different stages	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Our VET system should recognise different stages of learner performance	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
"Multiple stages" If the VET system were to recognise different stages of development, there is the question of how many stages would be useful to recognise? Would it be useful for VET to recognise the following stages?						
	A stage where a person learns about essential work knowledge and skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	A stage where a person expands their work knowledge and skill confidence	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	A stage where a person has mature work knowledge and skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	A stage where a person has expert work knowledge and skills	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
"Information" To guide their training work, RTOs often rely heavily on the information contained in units of competency. However, units of competency should also include 'enabling' learning outcomes that describe final outcomes. In addition to units of competency, to support RTOs...						
	Intermediate or 'enabling' learning outcomes should also be available	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Curriculum or training resources should also be freely available	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Assessment resources should also be freely available	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Curriculum or training resources should be nationally consistent	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	Assessment resources should be nationally consistent	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
"Workplace involvement" Except for through apprenticeships and traineeships, workplace contributions to training and assessing VET students is minimal. Please consider the role of workplaces						
	In general, workplaces should take a more direct role in training	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	In general, workplaces should take a more direct role in assessment	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

(Note that each section included a free response field inviting respondents to make comments if they wished to do so.)