

# The problematic role of CBT in Australian VET



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## Abstract

Any attempt to improve or reform Australia's system of vocational education and training (VET) should address the model of curriculum that is at the heart of the system. This model is often referred to as 'competency-based training' (CBT) although most stakeholders are probably more familiar with CBT in the form of 'training packages'. CBT is not only central to the way Australia's VET system works, it has been a constant for over twenty-five years. For many who work in the system, CBT is the only curriculum model they know for vocational education. This discussion describes the attractions of CBT to make clear that the architects of training reform had good reason to make CBT the cornerstone of a new system. This survey is followed by a systematic look at criticisms and shortcomings of CBT as articulated by researchers and other stakeholders. Finally, two questions are presented which would be useful to ponder in any attempt to shift away from CBT.

## Introduction

Australian VET is a dynamic product of complex drivers. Among the factors shaping the sector is competency-based training (CBT), a model of education and training that translates industry demand for skills into the educational activities of providers, teachers, trainers and learners. Introduced as a key element of training reform in the 1990s, the model is familiar to many stakeholders in the guise of training packages. The appeal of CBT to the architects of training reform is readily appreciated. As conceptualised for the Australian context, the model ensures a pivotal role for employer representatives and governments in determining the content of learning in VET. It gives providers and educators clear roles in teaching, assessment and quality control. In principle, the model also makes the outcomes of learning accessible to learners, parents, employers and other stakeholders, enhancing transparency of the system. But it has also been criticised. The conceptualisation of CBT has been questioned since the model was first articulated in America in the 1960s, while the Australian variant has

attracted its own critics. Indeed, at this time, criticism of the model and its expression in training packages perhaps has never been more widespread. From formal, academic criticism through to misgivings voiced by providers, educators, learners and even industry interests, it may be that a tipping point in consensus around CBT is near.

This chapter briefly considers the role of CBT in Australian VET, making clear that the model is central to the everyday work of the sector. The attractions of the model are detailed and analysed before criticisms are considered. The discussion concludes with some questions that might be useful to debate as new ways of formulating vocational curriculum are evaluated.

## Some attractions of CBT

To judge by policy, practice and the literature, competency-based training (CBT) is many things. On the face of it, CBT is an educational model based on work tasks that guides curriculum, teaching and assessment. A framework or model for understanding the competency approach proposed in a study of aviation industry training by the author and colleagues differentiates three aspects: (i) competence, (ii) competencies and (iii) competency-based training (Kearns, Mavin & Hodge, 2017). The first part of the model acknowledges that the focus of curriculum and training should be the competence with which effective workers carry out their occupational roles. This competence will have social as well as individual aspects and will have tacit and explicit dimensions. It can be acquired in many ways, and historically, there has never been a problem with the development of competence: for millennia it has been acquired effectively without the intervention of formal educational design work.

The second aspect of this model refers to the representation of competence for formal educational purposes. If learning is to be taken out of the uneven, locally effective context of close interaction with work and other workers, then some sort of formal documentation will be necessary. CBT is distinctive for its use of competency documents at this level. It opts for a special

genre of text that embeds into modules or units, among other things, conventions for the segmentation of occupational competence and for representing knowledge and skills. In the Australian VET implementation, units of competency texts are of a roughly comparable size across occupations and levels of expertise, and all represent occupational competence in terms of performance (elements, performance criteria) and lists of concepts and principles that are intended to capture the knowledge and other attributes believed to be necessary for the performance.

The third aspect of the model draws attention to the fact that all further curriculum development, teaching and assessment revolves around competency documents. CBT is marked by its constant reference to units of competency. In Australian VET, it is a fundamental expectation that what students learn, how they are assessed and the credentials they are awarded all refer in a systematic way to competency documents. Here's a basic representation of the model:

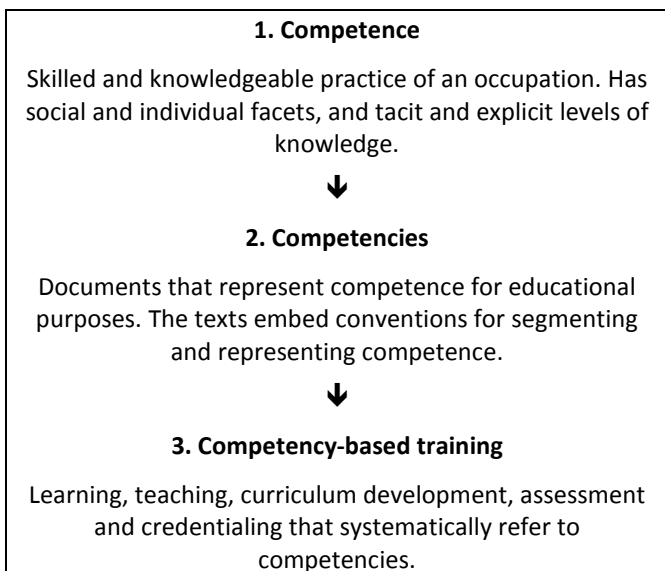


Figure 1. A model of the competency approach to education and training (adapted from Kearns, Mavin & Hodge, 2017)

However, the reality of CBT in Australia is far from captured in this model. That is because in Australian VET, CBT is more than an educational endeavour. It is also a social and political concern that brings in a range of stakeholders and interests apart from educators and students. Social interest in VET includes opportunities for mobility and recognition. The Australian implementation of CBT afforded unprecedented portability of credentials. Because the specifications of qualifications are national and the underlying units of competence are the same across Australia, a VET credential is in theory a known value everywhere within the nation. In contrast, before training reform, there were cases where a vocational education credential would be recognised only within one jurisdiction. People moving or working interstate could face frustrating barriers as no mechanism existed to formalise comparison between credentials offered by different providers in different locations. At a stroke, CBT

overcame this problem. A related CBT-enabled benefit is the regulated principle of 'mutual recognition' whereby one provider must acknowledge the competency-based attainments of a student who possesses evidence of competency assessed by another provider. Not only do whole credentials become nationally recognised, but studies commenced with one provider can (in principle) be completed at another. CBT also enables the recognition of competence without regard to the particular way it was developed. In principle, an individual can expect a registered provider to assess and formally credential them for competence that may have been gained via experience. Units of competency are the yardstick for such recognition.

To these systemic and socially valuable features of CBT must be added a different set of attractions for governments, employers and industry. Since the reform era, VET has increasingly served as a policy tool for governments. In this context, CBT is an effective mechanism for bringing employers and industry into a close nexus with VET. Specifically, giving employers and industry responsibility for guiding development of competency texts represents a strong measure to ensure providers and educators focus squarely on employer and industry needs. And by setting the foundations of curriculum – the units of competency – outside the influence of particular providers and educators, there is scope to bring private providers into a public VET system if they are willing to adopt the competencies as the basis of their provision. Further, it becomes possible to construct a VET market with government and employer representatives presiding above the fray, controlling the bases of curriculum, while promoting competition among providers. CBT is the linchpin of these innovations, effective in this setting because the model allows the decoupling of curriculum and provision. In other words, in the diagram above, steps 2 and 3 can be allocated to different parties. In the Australian case, a great deal of common sense is on the side of such an allocation of roles (even though it took some time for educators to come around to the idea). Who better to guide specification of competencies than those who use the skills of VET graduates? And who better to effect the teaching, learning and assessment based on competencies than providers and educators?

Yet other interests can be accommodated through the CBT model. From a government perspective, CBT enables a transparent and rational way to disburse public funds for VET. Instead of channelling funding to providers for them to spend at their discretion, funding for learner completion of units of competency or qualifications is possible. Apart from the gain in accountability this shift represents, more fine-grained funding policies can be formulated that direct funding to perceived areas of skill needs. At the same time, employers, industry associations and unions find that units of competency and the administrative apparatus of training packages can be included as factors in broader industrial relations negotiations and strategy. In negotiations surrounding changes to industrial awards, alterations to qualification

requirements, content or level are sometimes crucial to wage setting. Again, changing industry licensing requirements may spark arguments over the inclusion or exclusion of certain units of competency in a qualification or skill set. VET educators are often unaware that political motivations lie behind some changes to units, qualifications and training packages. By allocating competency development and educational practice to different parties, the politicking of each party can also enter VET, and here again the unique characteristics of the CBT model allow more interests to shape the increasingly complex field of Australian vocational education.

### **Some problems with CBT**

Although a range of attractions of CBT can be identified that make it a logical choice for those with certain priorities, there have been numerous criticisms. These come from a range of interested parties, from education researchers, to practitioners, through to industry and policymakers. Criticisms can be grouped into those that contest the efficacy of CBT to develop job-specific skills, and those that step back from the assumption that job-readiness should be the sole or main focus of a vocational education system. There are other criticisms that concern the system in which CBT is a central component and ways the system interacts with society and the economy.

Some of the criticisms can be understood with reference to the model of CBT presented above. The down-pointing arrows between the three levels of the model each represent a distinctive act or process of translation. The real work of competent workers must be translated into competency documents, and competency documents must be translated into teaching and assessment practices. In the first case, rules are needed to guide the creation of competency documents. One of the longest-standing lines of criticism of CBT amounts to a complaint that we cannot translate competence into competency documents without distortion, omission and/or oversimplification. In part, this criticism concerns the behavioural understanding of competence that is the default stance of many implementations of CBT including the Australian VET version (Hodge, 2007). The behavioural approach is to focus on what is observable about competent work: the performances that are evidence of competence. Elements and performance criteria are a direct legacy of the behavioural objectives approach, which emphasises the importance of observable behaviour over underlying knowledge when specifying learning goals. The critical argument is that observable performances cannot convey all that is important to convey about an occupation in curriculum, for teaching and measurement in assessment. Understanding, moral reasoning, knowledge and intuition can all be important ingredients in occupational competence but will be difficult or impossible to express in terms of immediately observable behaviours. By the same token, insisting that only performances of competence will be recorded in the documents and according to a specific structure means that assumptions about what is important and how to

represent that importance may override what occupational experts would say is important and is the best way to document it.

In part, this same line of criticism concerns the splitting of the representation of competence into multiple units of competency. The frequent reference to 'fragmentation' found in criticism of CBT is a sort of 'Humpty Dumpty' narrative about the adverse impact of separating and modularising representations of occupational competence (Buchanan, Yu, Marginson & Wheelahan, 2009). The underlying assumption of such criticism is that competence is a holistic achievement. To be a competent worker is not simply a matter of completing one procedure after another, but rather of acting upon a fundamentally unified understanding of the work that manifests in particular acts. Competence is supposed to be more than the sum of these acts. According to this criticism, 'atomised' curriculum in the form of a collection of units of competence both misrepresents occupational competence as a holistic achievement and leaves open the question of whether through teaching and learning the various parts of competence can be assembled into a whole in the heads of learners.

Both aspects of this criticism – that the observable does not necessarily capture competence, and that compartmentalising competence into multiple units disrupts the holistic nature of competent work – can be understood as a challenge to the assumption that translating occupational competence into a set of documents is a straightforward process. But there is a second arrow in the model presented above that signifies the process of translating the competency documents into programs, teaching and assessment practices. There is reason to think that this second phase of translation is problematic in its own way. This vulnerability of the CBT approach has not received as much critical attention as the translation indicated by the first arrow (from occupational competence into units of competency). A study by Hodge (2014) involved interviewing thirty Australian VET educators and designers about the way they read and used units of competency. The findings of this study suggest potential problems with the assumption that VET educators are well equipped to interpret the documents. An overall finding of the research was that most of the educators felt that the language of the documents was not clear. Given that all of the participants were appropriately qualified to work as VET educators (i.e., they held at least a Certificate IV in Training and Assessment and had demonstrated competence at least to the level of that presented in relevant units of competency), if the language of the documents was not completely transparent to them, there is reason to doubt the efficient transmission of the intents of the unit writers to VET students.

What could be happening here? Several theories may apply to the translation process in question. The most developed field of research and theory is hermeneutics or interpretation theory. Modern theory of interpretation describes a complex process invoked by any encounter

with a meaningful document. In this process, the interpreter brings a great deal of prior knowledge to the processes of reading and understanding. In other words, a lot is 'read into' any text we encounter. The resulting interpretations are always a mix of prior knowledge and meanings found in the text. In this context it seems wise to demand that educators possess at least a certain type and level of competence in the occupation so that the prior knowledge brought to the interpretation by diverse educators will be similar. However, the reality is that educators come to the competency texts with highly individual experiences of the occupation in question and apparently read quite different things into the units. From the perspective of theory of interpretation, then, it comes as no surprise to discover diverse readings and interpretations of units of competency by educators. But this is at odds with the assumptions of the system. The Australian implementation of CBT demands high levels of uniformity among interpretations. This, then, constitutes another criticism of CBT.

Stepping back from criticisms of CBT that cast doubt on the assumptions internal to the model, there are concerns about broader impacts. A line of argument based on the sociology of Basil Bernstein draws our attention to the societal impacts of purported flaws of CBT. Leesa Wheelahan (2007) has developed this critique. The argument has two sides. The first has been indicated already. Translating occupational competence into documents has the effect of sidelining important features such as occupational narratives, value systems, and the disciplinary knowledge mixed into at least some occupations. For example, mathematical knowledge is required by electricians. The development of the discipline of mathematics has taken thousands of years and has produced a powerful body of knowledge that underpins almost every aspect of our engagement with technology. Electricians need to access some of this body of knowledge as an essential ingredient in the practice of the occupation. But units of competency break up the occupation into tasks without regard for larger knowledge structures such as mathematics. This discipline cannot be taught on the basis of brief statements scattered through multiple documents. In other words, Wheelahan details a problem related to the first arrow of translation. But there is a strong social dimension of this criticism that goes beyond the coherence of the internal CBT model. If certain social groups gravitate to VET, and if VET is based on a curriculum model that undermines engagement with powerful bodies of knowledge, then there are social groups (working class, or of low socioeconomic status, or disadvantaged in other ways) that are denied access to this kind of knowledge. Through CBT, they may be given the ability to enact certain procedures that are, for instance, of a mathematical kind, but that is different to understanding some part of a body of disciplinary knowledge. Wheelahan's critique, then, steps outside the argument regarding the capacity of CBT to do what it is designed for and warns us of broader social impacts.

Another argument that steps back from questions of the objective and internal coherence of CBT has been

articulated sporadically through the literature and has emerged in public debate about Australian VET. For example, in recent keynote addresses by Craig Robertson and Jenny Dodd (ACDEVEG 3rd Annual Conference, 2017), the question has been posed whether Australia's version of CBT – associated with the system of training packages – is addressing the right goal. This criticism might be understood as questioning the economic purpose of CBT. If that purpose has been to give graduates the ability to enter an occupation and competently assume a work role with minimal delay – essentially, to save the employer the effort of training the new employee – then the criticism is that such a purpose does not take into account workforce needs that go beyond existing tasks. If the predictions of governments and supra-national bodies such as the OECD of rapid changes in industries and the economy are correct, then preparing workers for today's tasks fails to come to grips with the reality of contemporary work. In other words, vocational education should also be about equipping workforce entrants for change and continual learning. It should instil capacities for responding flexibly to transformations in work and contributing to those transformations. But the current regime of training packages is rooted in the present or recent past (sometimes years into the past). The criticism is that CBT and the training package framework cannot keep up and certainly cannot give learners the kind of thinking abilities and background knowledge that could prepare for a creative contribution to a rapidly changing work landscape. That work environment is sure to be different to the realities envisaged by competency standard writers and to be fluid enough sooner or later to reconfigure or dispense with those tasks described in competency documents.

To conclude this discussion of criticisms (by no means a comprehensive survey of the critical literature) we see there are those directed toward the internal coherence of the CBT model (e.g., that competency texts fragment holistic work practices) and those that question the goals and contribution of the model to society and the economy (e.g., learners are not prepared for a rapidly changing work environment).

## **Where to next?**

If Australian VET is at a tipping point, and if CBT is in question as part of the next transformation, how do we move forward? We can assume that if the pressure for change is great enough, policymakers and influential VET stakeholders will do something. An important question for all with an interest in Australian VET is how knowledge of curriculum models and analysis of current practices can contribute to a well-informed transformation. That is, a transformation that leverages the significant amount of creative and critical thinking that has gone on in relation to vocational education curriculum. It must be acknowledged that Australian CBT was a creative response to complex pressures. At the same time, the critical literature has the interests of learners and society as a whole at heart, and the benefit of careful analysis and weighing of the needs of learners, industries, the



economy and society. In this concluding section two questions are proposed as important to consider if the basis of curriculum in Australian VET is to move beyond CBT.

One question that seems central to the debate is the extent to which we really require a standardised, cross-occupational curriculum model. As argued in Hodge, Atkins and Simons (2016), CBT is unique in that it offers a cross-occupational way to construct curriculum. Put another way, in Australian VET, the units/elements/performance criteria format is applied to a very wide range of occupations. From community services to manufacturing to business services to health, diverse occupations are rendered in terms of this uniform approach to creating documents that go on to serve as the central reference point for programming, teaching and assessment. On the one hand, this high level of standardisation is a boon for stakeholders with oversight of the whole system and for mobile learners. It is a key attraction of the CBT model. On the other hand, not all occupations are necessarily well served by this type and granularity of standardisation. Criticisms were considered above that suggest for some occupations the model leads to fragmentation as well as distortion and omission. The breaking up of occupational practices and knowledge may lead to difficulties for teachers and students in reconstituting the holistic reality of the occupation in question. And in the process of rendering in terms of elements and performance criteria, aspects of occupations may be lost, such as larger knowledge structures, broad processes, ethical systems, historical narratives and future trends.

In the light of this question about standardisation, the concept of 'epistemic neutrality' may serve as a yardstick for evaluating alternative curriculum models (Hodge et al., 2016). Any generic curriculum model or framework – such as CBT – is created or mandated without detailed knowledge as to what and how it will be applied. At face value, this does not sound problematic. But if the model or framework contains assumptions about the kinds or the structures of knowledge that can be legitimately represented in future curriculum, then there are epistemic features of the model that may not work well with the kinds and structures of knowledge in some occupations or disciplines. The implication of the principle of epistemic neutrality in this context is that when devising and evaluating alternative curriculum frameworks for vocational education, care is taken to ensure that there is scope for allowing unique features of the knowing practices making up individual occupations to be represented in curriculum without forcing a given framework over them. Different occupations have different ways of looking at and valuing the world, have their own understanding of their history, trajectory and future challenges, and of their contribution to the economy and society. Understanding, knowing, affect and practice have unique contours from occupation to occupation. The principle of epistemic neutrality is about allowing the uniqueness of occupations to emerge in future curriculum models.

A full implementation of this principle in the vocational education context would require that each occupation devise and evolve its own curriculum model. For the bulk of human history, this is exactly what took place. 'Vocational education' was a tapestry of local practices directly guided by what occupations needed. But the world of work is different now. Since the industrial revolution, occupations have broken out of the boundaries of purely local practices while, in parallel, governments and industrial stakeholders have taken an interest in vocational education in a new work landscape. The forces of standardisation soon follow. Adam Smith famously analysed pin-making to show that the division of labour would result in larger numbers of pins being produced. Frederick Taylor argued that management needed to extract the knowledge of the shop floor to organise labour scientifically. Manuals produced by the American military during the First World War attempted to standardise large-scale industries such as shipbuilding (Allen, 1919) and this approach expanded in the Second World War. Mass markets promote occupational standardisation and training follows suit. From the perspective of public investment in vocational education, different types of standardisation emerge that facilitate consistency among teaching, curriculum and assessment practices and practices surrounding credentials. While it may be questioned how far bureaucrats require standardisation of curriculum content in the interests of making vocational education a tractable instrument of economic policy and provider of social mobility, there can be no doubt that the public interest is served when standardisation leads to the portability of qualifications, mutual recognition among providers and scope for recognition of skills developed outside formal credential frameworks.

From the perspective of public utility, some standardisation of vocational curriculum seems legitimate, creating a tension between this interest and the goal of epistemic neutrality. It is beyond the scope of this paper to propose an optimal position in relation to this tension. However, the tension does help us to ask useful questions when it comes to evaluating alternatives. Specifically, the question that arises from the paired goals of public utility and epistemic neutrality is how much standardisation needs to be imposed on the expression of particular occupations in curriculum to secure benefits such as qualification portability and recognition of skills? Possibly the bureaucratic and industrial relations interests in VET currently served by CBT could be met in other ways than by curriculum standardisation that does not address this essential tension between public utility and epistemic neutrality.

A second question that may be useful in debate about post-CBT models is to what extent should the ability to undertake job tasks immediately on graduation be the objective of vocational education? The implementation of CBT in Australian VET represents a definite stance on this question. A graduate is someone who has been deemed competent to perform a particular range of specific tasks. It is assumed the graduate will be able to undertake

actual tasks with minimal adjustment. However, as indicated above, such a focus has been challenged by critics. In brief, it is claimed that a focus on today's tasks leaves learners without a deep, knowledgeable grasp of their intended occupation and without the breadth of understanding to enable agility within rapid occupational change. By these criticisms, the focus of Australian CBT is too narrow in the context of complex jobs and a dynamic workforce. Yet it appeals to common sense – and surely a great many VET students and teachers – to learn about the actual tools, techniques and settings of the target occupation. This common-sense notion has a theoretical correlate in one side of a long-running debate in education research about the development of generic skills such as 'critical thinking' (Pithers & Soden, 2000). In this debate a strong argument has it that a learner requires 'domain knowledge' – specific knowledge of and practice in a particular area of learning – before the more free-floating capabilities of something like critical thinking can develop. To bring this claim into relation with vocational education, even if something other than facility in current job tasks is desirable, it would be helpful or necessary to develop deeper and/or broader abilities and knowledge on the basis of engagement with such tasks. There would perhaps be a legitimate role for exposure to today's tasks even if competence in these was not the overarching goal (as it currently is in Australian VET). The question then would shift to exactly how a focus on learning known tasks would form part of a curriculum devoted to some broader objective.

If the main focus of vocational education should not be on preparing graduates for today's tasks, what should be the focus? One way of thinking about an alternative is implied in the criticism of CBT that what it focuses on within an occupation is too narrow. If an occupation is more than the sum of activities observable to an outsider, then what else does it comprise? According to some commentators, knowledge or theory is sidelined or omitted in the CBT model (Broudy, 1972; Wheelahan, 2007; Gamble, 2016). The claim here is that although 'required knowledge' or 'knowledge evidence' can be listed in units of competency and thus taught and assessed in VET, the development of disciplinary knowledge is hampered by the need to prioritise starting and completing individual units of competency. A possibility, then, is to foreground formal knowledge when it is required by the occupation – whether mathematics, sociology, physics or psychology – and pursue development of it in a concentrated way. For these occupations, vocational education might then involve knowledge subjects and as well as units that address tasks.

A different way to think about alternatives is to step back from the assumption that vocational education should be about preparing for current occupations. If today's students are going to be entering occupations subject to more or less rapid transformation, or can be expected to change their jobs many times, then maybe vocational education should be framed around knowledge and skills common to occupational groups and/or to knowledge and skills that can reasonably be expected to endure. There

are already analysis and theory that seek to distinguish occupational clusters with a view to determining either the patterns of labour market mobility or 'vocational streams' (Yu, Bretherton & Buchanan, 2013) or the knowledge and skills common to related occupations. These approaches to conceptualising workforce engagement have implications for vocational education. For example, it could be imagined that the Foundation for Young Australians (AlphaBeta, 2017) conceptualisation of job clusters might give rise to vocational education curriculum. Or the vocational streams research could conceivably translate into prescriptions for curricular structures. Yet again, analyses of 'future skills' could offer prescriptions for vocational curriculum (CSIRO, 2016). Implications can also be more personal. For example, the 'capabilities' approach introduced by Amartya Sen and championed by researchers such as Wheelahan (2016) moves the focus to empowering individuals to flourish in a fluid job market. Capabilities can be thought of as mapping approximately to job clusters and involving development of knowledge and skills shared among several existing occupations.

A challenge for these approaches is posed by limits on our ability to predict change in jobs and job markets. Although unprecedented computational power is available along with big data sets for analysis, basing today's vocational education curriculum on such analysis must be risky. And then there is the challenge of explaining to prospective students and other users of the VET system that job clusters, vocational streams or future skills should be regarded as a viable substitute for a learning focus on recognisable jobs. Here again, it is beyond the scope of this discussion to argue for an optimal position as to what should be the focus of vocational education if it is not to be facility in the job tasks of current occupations. But it is important to systematically identify and consider alternative curriculum goals and, if a future vocational curriculum can have more than one focus, then consider what blends are possible and with what likely benefits.

So, two questions for future vocational curriculum in Australia are posed: one about how much curriculum standardisation is necessary across diverse occupations, and another about alternatives to a focus on today's job tasks that set broader goals for vocational education. These questions are prompted by reflection on the advantages and challenges of Australia's existing competency-based VET system. Obviously, transformation of this system poses many questions, but the shape of future vocational curriculum requires at least as much thought and creativity as that which accompanied the introduction of CBT nearly three decades ago.

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