Chapter 6
Using an Epistemological Perspective to Understand Competence-based Vocational and Professional Education

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6.1 Introduction

Competence-based approaches to vocational and professional education remain internationally ascendant, despite the weight of critical argument against them. In this chapter, an epistemological analytic framework is used to illuminate that situation. The analysis begins with a brief historical account of the contemporary flourishing of competence-based vocational and professional education, before introducing the notion of epistemologies and their relationship to educational policy and practice. We then apply that epistemological framework to illuminate the situation, arguing that competence-based education evidences an instrumental epistemology, which is significantly incommensurable with the disciplinary, constructivist and emancipatory epistemologies in which telling criticism of it is grounded. The resilience, then, of competence-based education to such criticism may be understood as being a function of the singular compatibility of its informing instrumental epistemology with the contemporary cultural context of globalising performativity, in which the contribution of vocational and professional education to enhancing comparative competitive economic advantage emerges as the driving criterion of value. We then speculate on the implications of the analysis for the future form of vocational and professional education policy, practice and research and on the place of competence-based education in that future.

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6.2 The Historical Context

Contemporary competence-based approaches are agreed to have emerged in systematic form in the context of American Cold War education policy (Harris et al. 1995). The launch of Sputnik by the USSR was taken by US policymakers as a sign that their education system was failing to produce the science and technology innovators required for national triumph in the space race. One of the elements of that problem was identified as being the professional preparation of teachers, so a national programme was instituted to improve teacher education (Hodge 2007). 'Performance-based teacher education' (PBTE) – later called 'competence-based teacher education' (CBTE) – emerged as a response to the perceived malaise. PBTE was heavily influenced by behavioural psychology, in its emphasis on the specification of learning objectives and on learning assessment in terms of observable behaviours. From the early implementation of such approaches through to present-day competence-based policy and programmatic initiatives, they have generated a steady stream of criticism, through a range of arguments, including their inability to capture crucial qualities of performance (Broudy 1972), their dehumanising of important learning (Mezirow 1978), their theoretical incoherence (Hyland 1993), their inherent inability to achieve their own goals (Ashworth and Saxton 1990), their complicity in the disempowering of workers (Edwards and Usher 1994) and their formalisation of power hierarchies (Field 1991).

In spite of the persistence, sophistication and telling nature of that criticism, competence-based education has continued to be promoted in vocational and professional contexts. During the 1980s, it was taken up by neoliberal governments, who came to view education and training systems as potential contributors to national economic performance (Moore 1987). A formula for harnessing vocational education systems in particular to economic policy goals had been articulated by economic theorists, arguing that employers need to be given a central role in determining vocational curriculum and offering models for achieving that end (Finegold and Soskice 1988). Because competence-based education allows the formulation of curriculum aims to be separated from the implementation of the curriculum, it presents a model of educational practice open to giving employers a leading role in curriculum development. It has since then flourished in national systems of 'skill formation', articulated in programmes of vocational and professional education policy reform throughout the world (Winterton and Haworth 2013). Why, then, has the continuing, telling stream of criticism been so ineffective in stemming that flourishing?

6.3 Informing Epistemologies: An Alternative Perspective

We are here articulating a response to that question by focusing attention on the different epistemological traditions, or epistemologies that are evident in both competence-based vocational and professional education, and the educational perspectives in which strong criticisms of it are grounded.

In so doing, we are adopting the conventional meaning of 'epistemology' to identify the discipline of inquiry that is focused on the philosophical study of knowledge: what knowledge is and how it is generated, learned, taught, assessed and used (Sulkowski 2013). Epistemological inquiry has traditionally identified and focused critical attention on a diversity of different conceptions of what constitutes knowledge – of what it actually amounts to – including coherentist, foundationalist, pragmatic, naturalistic, relativist, positivist, realist and critical realist conceptions (Abel 2011). These different conceptions of knowledge may be seen, then, as constituting distinctive, substantive accounts of the nature of knowledge – as what may be termed different *epistemologies.*

Such epistemologies are certainly important in education, particularly in educational research (Brown and Baker 2007). In educational policy and practice, though, attention has traditionally been focused, not so much on the nature of knowledge, on *what is important in the act of knowing*. Such attention introduces a *normative* element into the recognition of different epistemologies – that of what is humanly *important*. That normativity recognises that the epistemologies capture the cultural constraints and restraints informing educational practice, including that of vocational and professional education, in defining what *should* be done and should be the case in those cultural practices (Hansen 2007). Correspondingly, the epistemologies defined in this way are different from those defined by traditional philosophy. In educational scholarship, they have commonly been presented as elements of different *philosophies of education* (Elias and Merriam 2005), but our concern in this chapter – with the epistemic features of those philosophies and the educational implications of those features – leads us to use the more accurate notion of *epistemologies*. For our purposes here, we may recognise four such conceptions of knowledge, that is, conceptions of what is important in the act of knowing: knowledge as truth, knowledge as authentic commitment, knowledge as power and knowledge as effective action. Each of those conceptions is seen as defining an epistemology: knowledge as truth defining *disciplinary* epistemology, knowledge as authentic commitment defining *constructivist* epistemology, knowledge as power defining *emancipatory* epistemology and knowledge as effective action defining *instrumental* epistemology. The recognition of these four epistemologies seeks to capture the substantial majority of published judgements about the value of competence-based vocational and professional education, whether for it or against it.

Each epistemology captures distinctive approaches to the development of new knowledge, to learning and to using knowledge, as well as a distinctive view of how that use contributes to human well-being (Williamson 2000). Each thus captures (normatively) the constraints for educational policy and practice to have a distinctive form, to exhibit distinctive characteristics, if it is to be judged to be of good quality. In particular, it will emphasise particular ways of thinking about education over others, and it will require particular aspects of educational policy and practice rather than others – including criteria for assessing educational attainment. These educational characteristics are thus captured in different *approaches* to education: each epistemology explaining the commitment to a closely related cluster of approaches evidencing those characteristics and each epistemology providing the arguments *for* each approach.

   The epistemologies are implicit in the historically cumulative body of scholarship in education. However, they align only partly with traditionally recognised epistemologies, with, for example, logical positivism (Hanfling 1981) historically falling into what is recognised here as disciplinary epistemology, although the latter is now substantially critical realist (Archer 1995), and critical realism is also influential in what are here presented as the constructivist and instrumental epistemologies. What is recognised here as emancipatory epistemology, though, is closely aligned with traditional epistemic relativism (Muller 2000). It should also be acknowledged that the epistemologies here recognised have long been evidenced in the recognition of practical philosophical approaches to education, such as those of an 'academic', 'critical', 'humanistic', 'progressive', 'radical' or 'practical' nature (Elias and Merriam 2005).

   Although the recognition of these four epistemologies is firmly grounded in educational scholarship, their articulation to date has been fragmentary, and hence their implications for our understanding of the value of competence-based vocational and professional education have not been recognised or systematised as we are attempting to do here. Our purpose, then, in focusing on the four epistemologies in this work is to sketch their normative features in vocational and professional education and to examine how those features may inform our understanding of the value of competence-based vocational and professional education.

6.4   Disciplinary, Constructivist, Emancipatory and Instrumental Epistemologies

The following brief outline of each epistemology sketches, firstly, selected key epistemic features: its conception of knowledge; how new knowledge is developed, learned and used; and how knowledge is seen as contributing to human well-being. Selected normative characteristics of educational theory, policy and practice evidencing the epistemology are then outlined: its educational focus and teleology, its criteria for assessing educational attainment, the sort of knowledge sought in its educators and contemporarily significant educational approaches developed through it. A selective summary of that material is presented in Table 6.1.

6.4.1   Disciplinary Epistemology

At the core of disciplinary epistemology is a view of knowledge as truth about reality (Abel 2011). Such knowledge thus tends to be propositional and theoretical in nature. Its generation focuses on the objective, disciplinary discovery of theoretical knowledge through discrete academic disciplines (Archer 1995). Likewise, the learning of disciplinary knowledge is through the study of disciplinary bodies of

Table 6.1 Selective features of the framework of educational epistemologies

Epistemology	Epistemological and educational features					
	Conception of knowledge	Contribution to well-being through	Educational focus	Educational attainment assessed as	Valued educator knowledge	Educational approaches
Disciplinary	Knowledge as truth	Wisdom	Immersion in disciplinary knowledge	Mastery of bodies of knowledge	Disciplinary expertise	Liberal
Constructivist	Knowledge as authentic commitment	Character formation	Immersion in authentic experiences	Achievement according to models of human development	Character as persons	Progressive Humanist Problem centred Student centred
Emancipatory	Knowledge as power	Emancipation	Immersion in social criticism and action	Conformity to the framework	Commitment to the emancipatory framework	Critical Radical Transformative
Instrumental	Knowledge as effective action	Capability development	Engagement in routines	Performance of predetermined actions	Expertise in the learning and in the implementing framework	Behavioural Outcomes based Competence based

knowledge (Hutchins 1968). Using disciplinary knowledge involves its theory-driven application (Mulcahy 2009). Disciplinary knowledge is thus seen as contributing to human well-being through the wisdom of what is right, good, true and beautiful and of how reality actually works itself leading to human action for the individual and greater good (Collier 2004).

Education evidencing disciplinary epistemology focuses on the immersion of learners in the theoretical content of academic disciplines as bodies of knowledge (Hirst and Peters 1970). It is directed to the development of enlightenment through the depth and breadth of individual understanding in those disciplines. Criteria for assessing educational attainment are strongly focused on learners' mastery in understanding, interpreting, interrelating and manipulating disciplinary content through language and numerical symbolic systems (Barnett 1994). Educators (as teachers) are valued particularly for their disciplinary or content expertise and are seen importantly as transmitting disciplinary content to their students through good teaching and their capacity to reliably and validly assess student learning (O'Hear 1981). The contemporarily significant educational approach that evidences disciplinary epistemology is commonly characterised as being *liberal* in nature (van der Wende 2011).

6.4.2 Constructivist Epistemology

At the core of constructivist epistemology is a view of knowledge as authentic commitment and engagement – authentic in the sense that such commitments are, in some way, true to the nature of humanity and its cultural contexts, across the range of artistic, scientific, individual, social and political endeavour (Dooley 1974). The idea of commitment here entails that which is meaningful in some sense to the subjects, in that it expresses or realises notions or capacities that are valued by them – aesthetically, descriptively, experientially, historically, interactively, scientifically or in other like ways. Such knowledge thus tends to focus on the idea of *being* and to be dispositional in nature. Its generation, correspondingly, may be characterised as the culturally grounded generation of dispositional knowledge (Biesta and Burbules 2003), often negotiated or interactive and drawing upon a wide range of types of human experience and engagement (Alexander 1995). The learning of constructivist knowledge tends to be grounded, reflectively, in the lived experience of situated human engagements or interactions (Fairfield 2009). Using constructivist knowledge tends to follow the same patterns and to be relatively direct in its contextualisation (Rorty 1989). Constructivist knowledge is thus seen as contributing to human well-being by its direct relationship to matters of human concern through the development of character (Blackham 1968).

Education evidencing constructivist epistemology focuses on the immersion of learners in authentic experiences involving their development as persons: in and through interactive educational engagements situated in the cultural contexts of significance to them (Dewey 1966). It is directed to individual actualisation, holistically, through self-knowledge and self-development, socially and spiritually contextualised.

Criteria for assessing educational attainment are drawn from pertinent models of human, social and spiritual development, with appropriate cultural contextualisation (Patterson 1973). Educators, commonly regarded as learning facilitators, are valued for their communicative and social skills and their character as empathic, understanding, encouraging and accepting guides of their students (Valett 1977). Contemporarily significant educational approaches evidencing constructivist epistemology are commonly characterised as being humanistic, progressive or student centred (Howlett 2013).

6.4.3   Emancipatory Epistemology

At the core of emancipatory epistemology is a view of knowledge as power, in the sense that all knowledge is seen as serving a political agenda involving the structuring of relationships between and among categories of persons (Abdi 2006). All knowledge is thus accepted as being relative to the explanatory framework through which it is generated. The generation of emancipatory knowledge involves the construction and elaboration of an explanatory framework of meaning that is paradigmatically radically oppositional to the prevailing hegemonic framework or ideology. The emancipatory framework is thus seen as being totalising or universalising, hence naturally universal (Brookfield and Holst 2011). Learning through it is seen as involving learners' radical conscientisation to the explanatory framework: their transcendence over, or liberation from, the false realities of the prevailing hegemony (Newman 1999). Emancipatory knowledge use follows those same patterns (Hart 1992). The contribution of emancipatory knowledge to human well-being is thus through the emancipation of learners, optimising social, economic and environmental relationships for the greater good of humankind: liberating oppressed persons from the false consciousness and exploitation they have been experiencing under the prevailing hegemonic framework (Monchinski and Gerassi 2009).

Education evidencing emancipatory epistemology focuses on the immersion of learners in social criticism and action (Brookfield and Holst 2011). It is directed to the transformation of learners to living in and through the emancipatory explanatory framework. Such an approach focuses attention, simultaneously, on the weaknesses of the opposing hegemonic framework, as the object of critique and social action, and on the strengths of the emancipatory one, as the source of criticism and social action (McMurchy-Pilkington 2008). The criteria for assessing educational attainment are strictly and straightforwardly dictated by its explanatory framework: they are immanent to it (Brookfield 2005). Educators are valued primarily for their knowledge of and commitment to that framework and their ability to persuade learners to its cause (Illich 1973). Contemporarily significant educational approaches evidencing emancipatory epistemology include those commonly characterised as being critical, radical or transformative, including socialist, feminist and Freirean approaches (Collins 1998).

6.4.4 Instrumental Epistemology

At the core of instrumental epistemology is a view of knowledge as effective
action – as the capability to act on and in the world (Bagnall 2004). The ends,
though, to which action is directed, are essentially external to the epistemology,
being drawn from the prevailing cultural context, rather than the epistemology itself
(Bauman 1995). Such knowledge is essentially manipulative in nature, in that it
makes it possible to do certain things in particular ways (Bagnall 1999). Its genera-
tion focuses on its reductionist elucidation in the context of its effective practice,
foregrounding the skills and capabilities – together with their informing understand-
ings, inclinations and propensities – to undertake the otherwise-determined valued
tasks effectively and efficiently (Monette 1979). The learning of instrumental
knowledge is seen as involving cycles of practice and assessment, undertaken
through particular realms of practical engagement – vocations, professions or other
domains of human instrumentality (Harris et al. 1995). Using instrumental knowl-
edge involves the appropriate application of the learned skills or capabilities in the
proper context of their use, drawing on other forms of informing knowledge
(Schecter 2010). Instrumental knowledge is thus seen as contributing to human
well-being through enhanced learner capability to more effectively and efficiently
attain desired ends valued in the prevailing cultural context (Tuxworth 1989).

Education evidencing instrumental epistemology focuses on learners' engage-
ment in learning routines under specific conditions (Bagnall 1993). It is directed to
developing highly valued individual action: highly skilled or highly capable indi-
viduals in the case of competence-based approaches (Bagnall 1994). Both the nature
of the intended performative attainment and the conditions for its demonstration or
display are specified prior to educational intervention (Gonczi et al. 1990). Their
specification is commonly achieved by subjecting the external performance goals to
formal processes of task analysis (van der Klink et al. 2007). Ideally, the nature and
extent of the learning required by each individual learner will also be known prior
to educational intervention, so that the intervention may be structured to achieve the
desired change with maximum efficiency (Hyland and Winch 2007). Criteria for
assessing educational attainment are predetermined by the learning task as being
performatively demonstrable and measurable – centrally, skills and capabilities in
the case of competence-based education – under the prespecified conditions (Jesson
et al. 1987). Educators are valued particularly for their technical expertise, both in
the learning task and in learning assessment, task analysis and structuring educa-
tional opportunities to achieve desired performance outcomes (Bagnall 2004).
Contemporarily significant educational approaches evidencing instrumental episte-
mology include behaviourist and outcome-based and competence-based education
(Elias and Merriam 2005).

6.5   Understanding Competence-based Education

Each of the four epistemologies thus captures an ideal of education as having a particular form: as having particular properties or characteristics. To the extent that any approach to education – competence-based vocational and professional education included – falls short of that ideal form, it is less than properly educational from that epistemological perspective. One approach to evaluating competence-based education from each epistemological perspective, then, is to use as evaluative criteria the differentiating educational qualities captured by each epistemology. Taking that approach here by drawing on the qualities noted in the foregoing articulation of each epistemology, we argue: (1) that competence-based education is straightforwardly *compatible* with the criteria from an instrumental epistemological perspective and (2) that competence-based education is straightforwardly *incompatible* with the criteria from each of the other three contemporarily important epistemological perspectives. We consider the first of these points here and the second in the next section.

That competence-based vocational and professional education is *compatible* with the ends and means of instrumental epistemology is revealed in its focus on equipping learners for competent action in workplace or professional settings (Mulder et al. 2007). In some cases, especially in cases of competence-based vocational education, the ends of this preparation are specified through methodologies that generate specifications of job roles or tasks (Tovey and Lawlor 2004). In other cases, ends are specified in terms of 'generic' competencies, such as interpersonal skills, that are seen as applying across occupations (Biesma et al. 2008). The value of competence-based education at any social level is essentially an economic consideration (Ryan 2011). In all cases, education is tied to external contexts, whether in the form of particular occupations, occupational fields or national policy imperatives. The specification of competencies yielded by occupational analysis may be strictly behavioural or contain cognitive content to some variable extent (Winterton 2009) and is always recorded in the form of textual description. Competencies inform, or contain, learning outcomes, and curriculum and assessment are designed in accordance with them. Curriculum is often modular, with modules based on individual competencies or clusters of competencies (Harris et al. 1995). Assessment is either wholly or substantially performance based, with criterial performances drawn from the specifications recorded in competence articulations (Tovey and Lawlor 2004). Educators in competence-based education programmes are ostensibly valued primarily for their occupational and pedagogical expertise, although technical expertise in the use of competence-based systems is highly prized (Innovation and Business Skills Australia 2013).

6.6   Understanding Competence-based Education Critique

When examining an argument about the value, whether positive or negative, of competence-based education, we can profitably ask what epistemological assumptions are being invoked. By raising that question, we may determine the extent to which an argument is consistent with an epistemology or whether it attempts to combine epistemologies. The rationale for the epistemological framework suggests that arguments spanning more than one epistemology risk incoherence, since the epistemologies make incompatible claims. It also, thereby, suggests that coherent arguments from different epistemologies may, in combination, be intractable.

For critique from a disciplinary epistemological perspective, the ends of competence-based vocational and professional education distort, diminish or neglect the theoretical, knowledge-dependent or disciplinary dimensions of occupations. Addressing the emergence of competence-based teacher education programmes, Broudy (1972) argued that theory is essential to understanding the principles of disciplinary knowledge, acknowledging that not all professionals could supply a theoretical account of their practice, but that this phenomenon may be misunderstood as justifying the removal of theoretical curriculum from teacher preparation programmes. Competence-based approaches were argued by Broudy and also Carr (1993), as being unable to engage with or accommodate theoretical knowledge, because practical, contextualised applications become the *content* of competence-based programmes and learning assessments *of* those contextualised performances. Wheelahan (2007) extended this criticism, arguing that workers in any skilled occupation require access to the 'generative principles' of disciplinary knowledge, if they are to be equipped to respond skilfully to new situations and to engage with the broader discourse surrounding their occupational fields. Gamble (2003) made a similar point in her analysis of knowledge structures in crafts, arguing that the knowledge employed in crafts is not simply the application of disciplinary knowledge to practical problems, because it has distinctive conceptual forms and relationships to its context.

Critique from a constructivist epistemological perspective takes issue with the way the approach sidelines questions of growth, development, responsibility and awareness. Mezirow (1978) attacked competence-based education and allied approaches to learning for their narrow focus on technical proficiency. He suggested that such educational practices 'address the wrong reality' (1978: 107), if the goal of learner development is a creative and self-fulfilled worker. Research by Hodge (2010, 2011, 2014), employing Mezirow's theory of transformative learning to understand deep learning in the context of competence-based vocational education, found that transformative learning did occur in such settings, but that it did so *despite* the competence-based curriculum, rather than *because* of it. Occupational specialists and educators interviewed for that research affirmed that personal development was essential to competent practice in the occupations studied, but that the competence-based curriculum and pedagogies were indifferent to it. The research participants valued curriculum and pedagogies that confronted learners with mor-

ally challenging work-based dilemmas and educators who were capable of understanding the dynamics of deep, painful change in learners. Collins (1987) used a 'theory of relevance' to critique competence-based education. He argued that, because competence-based education presents educators and learners with 'prepackaged' curricula, learners are positioned as passive receivers, rather than as active seekers, of knowledge, requiring them to 'dissociate' themselves from their own direct experience to accept outcomes specified in competence statements.

Criticism of competence-based education from an emancipatory epistemological perspective finds it to be a form of control by powerful interests. Moore (1987) argued that the competence-based approach encoded a conservative form of control over the education system, eroding the autonomy of vocational educators and students through restricting their access to the knowledge contexts that justify action. He argued that the competence-based 'new vocationalism' was an 'ideology of production', used to regulate education. For Field (1991: 42), the competence approach constituted a 'pedagogy of labour', through which a 'new Fordism' is introduced, undermining worker autonomy, devaluing work and denying vocational education any role in being 'future oriented and even emancipatory'. Jackson (1993: 155) called competence-based approaches to vocational education an 'ideological practice' that not only reasserts control by employers over workers but also serves to extend this control to the institutions and practices of vocational education. Edwards and Usher (1994), using Foucault's concept of disciplinary power, showed that the atomisation of skill and knowledge through competence statements and the assessment and reporting practices of large-scale systems of competence-based vocational education facilitated the surveillance of individuals and the compliance of learners with the dictates of the system: creating a potent mechanism for the production of 'docile bodies' incapable of critical action. Hodge and Harris (2012) went further in arguing that competence-based vocational education serves to discipline employers and educators as well as learners in the promotion of orderly conduct at the level of the population. Jones and Moore (1993) argued that competence-based professional education may best be understood as a broad agenda of state control over professional expertise, in which the conversion of bodies of knowledge into the visible codes of competence statements facilitates the transfer of control from these groups to bureaucrats.

6.7 Understanding the Contemporary Ascendancy of Competence-based Education

The framework of educational epistemologies gives us a way to comprehend the contemporary appeal of competence-based vocational and professional education. We maintain that this appeal is due in large part to the dominance of instrumental epistemology in the broader cultural context characterised by what we term 'globalising performativity'. Globalisation is here understood as the process of

international integration and convergence of culture and cultural artefacts, including political, social and economic systems (Giddens 1990). Contemporary globalisation is characterised by the prevailing cultural context of performativity (Lyotard 1984/1979). It is driven to the point of it being the contemporarily dominant cultural determinant internationally by the cultural pervasion of information technology (Castells 1998). That cultural context is grounded in the logically inevitable progression of the Enlightenment project of critical rational empiricism to the point where it undermines the grounds for the traditional commitment to the universal intrinsic values of progressive humanism (Bagnall 1999). It thus engenders a culture substantially lacking in nonarbitrary intrinsic value, in which human activity is strongly focused on instrumentally achieving outcomes drawn from a multiplicity of different domains of human engagement and systems of belief and in which the only constant common determining value is that of achieving competitive advantage: a culture of performativity (Dreyfus and Kelly 2011).

Such a cultural context has a number of dimensions, but those that are of particular importance to the analysis in this chapter are as follows (Henry et al. 2001; Marginson and van der Wende 2007; Rizvi and Lingard 2010):

1. Performativity focuses on, or places a high value on, *action*: on doing, on performing and on achieving.
2. In so doing, it focuses on *outcomes* – on what is done or achieved in and through that action and on its *effectiveness* in doing so.
3. Such performativity is both grounded in and exhibits the *externalisation* of value from human engagements. Value is *extrinsic* to, rather than intrinsic in, those engagements.
4. In its focus on achieving desired performance outcomes of extrinsic value, performativity places a high value on the *efficiency* with which resources are used in doing so, to the exclusion of other outcomes being achieved.
5. Such performativity therein promotes attention to the *comparative competitive advantage* of different types of engagements, processes, programmes, policies or organisational arrangements in achieving the desired outcomes.
6. In assessing comparative competitive advantage, all value tends to be reduced to a common criterion or currency: that of *economic* cost and benefit, cultural 'economism'.
7. The focus, then, is on *technical*, *mechanistic* or *programmatic* relationships between the desired economic outcomes and the costs of contributing human actions, engagements, policies and interventions.

These dimensions of the prevailing cultural context of performativity clearly align strongly with the features of instrumental epistemology and instrumental education, outlined above. Conversely, they are, to varying degrees, incongruent with the other three epistemologies and their educational implications, from which the greater bulk of arguments against competence-based vocational and professional education – as a type of instrumental education – are drawn. In such a context, arguments against competence-based education may be expected to carry less weight than those for it.

Although other sectors of education are affected by this context, vocational and professional education are particularly so, because of the tendency to see them as being essentially concerned with enhancing *economic* advantage through skill development (Moore 1987). Performativity thus impacts globally on vocational and professional education policy reform through the perceived imperative for that sector of education to contribute efficiently and effectively to enhancing comparative competitive advantage at all social and political levels: from that of the individual seeking work in competition with others to that of a national economy being governed to compete successfully against others in producing goods and services.

The power of the contemporary globalising context of performativity may also be seen as being heightened by the arguably significant degree of *incommensurability* between and among the four epistemologies and their respective approaches to education. The notion of incommensurability here is that of the differences between the epistemologies and their approaches to education being irresolvable unless essential features of education informed by the respective epistemologies are denied (Feyerabend 1978). The incommensurability here flows partly from the irrationality of compromise, because the differences are not just a matter of degree, but also of kind: they speak to different features of education. It also flows from the unethical nature of compromise: since the identified characteristics of education flowing from each epistemology are matters of *ethical* concern, denying the implications of an epistemology is strictly unethical. The incommensurability is, though, most importantly grounded in the *totalising* nature of each epistemology, in that the educational implications of each epistemology constitute, normatively, the valued nature of *all* education or all education in a certain domain. None of the epistemologies has the nature of a partial construct, the educational implications of which may be taken on board to some variable extent and which therefore might be combined with selected features flowing from other epistemologies.

The comparative characteristics of the four epistemologies articulate this incommensurability. We take here, as an example, just the criterion of the focus of the educational engagement. For disciplinary education it is a view of education as the immersion of learners in the theoretical content of academic disciplines. For constructivist education, it is a view of education as the immersion of learners in authentic experiences. For emancipatory education, it is the immersion of learners in social criticism and action. And for instrumental (including competence-based) education, it is the engagement of learners in predetermined routines. We suggest that it is straightforwardly self-evident that each of those properties is substantially incommensurable with the others. It is not possible, for example, to develop education that is both characterised as being the immersion of learners in the theoretical content of academic disciplines and as being their immersion in authentic experiences. Each speaks to a different form of education, any compromise of which is a matter of ethical concern from its epistemological perspective, and each demands recognition as an *essential* feature of education.

In the light of that incommensurability, the arguments from different epistemological perspectives may be seen as creating a policy environment of forced choice between the epistemologies. In such a situation, political action and educational

policy will tend to be shaped by influences outside the logic of the epistemologically based educational arguments. The strength of the press from the globalising cultural context of performativity may be expected, then, to dominate at the political and hence the policymaking levels. In such a context, there is little likelihood that educational arguments from disciplinary, constructivist or emancipatory epistemological perspectives will have any significant political or policymaking purchase, but every likelihood that educational arguments from an instrumental perspective will do so.

6.8 Implications for Competence-based Approaches to Vocational and Professional Education

What, then, of vocational and professional education? Where does this take our collective identification with competence-based education as the only practicable approach to vocational and professional education? In the face of political and policy pressures from the contemporarily pervasive globalising cultural context of performativity, the arguably high degree of incommensurability between the different epistemologies and their respective approaches to education may be expected to favour the continuing advance and domination of competence-based approaches to education.

However, it should also be appreciated that different epistemologies and their respective educational approaches may be seen in this respect as alternative *paradigms*, commitment to which may change over time, not only in response to changing contexts but also in response to the cumulative weight of argument (Kuhn 1970). Accordingly, continuing critique of competence-based education, especially critique that is informed by an understanding of the epistemologies involved, may, over time, lead to a body of evidenced argument that may, in itself, reach a tipping point, from which political allegiance may veer in positive response to an alternative that it is suggesting: that is, a paradigm shift towards education informed by one of the alternative epistemologies. In the longer term, the situation may thus be expected to change, unless history fails to serve as an indicator of the future.

When that happens (if, indeed, it does so), we may expect consideration to be given to the major competing alternative epistemologies here outlined. What, then, of the future prospects of those alternatives? Firstly, it should be noted that our argument for the significant incommensurability of the competing epistemologies points to the probable failure of attempts to hybridise competence-based education with selected elements of educational approaches informed by its competing epistemologies. Although an important strand of theory, policy and practice has been focused on such a task (Hager and Gonczi 1991; Mansfield and Mitchell 1996), our argument points to the probable futility of such moves. Any question, then, of what competence-based vocational and professional education might look like if it were to take into account critique from the other epistemologies is unanswerable, because the limitations of competence-based education from the perspectives of the other

epistemologies are such as to challenge its essential nature and assumptions. The important point here is that the epistemic foundation of each cluster of competing approaches to education is fundamentally distinctive and exclusive. It not only articulates a distinctive conception of the nature of valued knowledge, but, in doing so, it *excludes* other constructions of valued knowledge.

What, then, remains? Must we choose – assuming that we have any choice in the matter – between approaches grounded in disciplinary, or constructivist, or emancipatory epistemologies? Responding to that question, we might note, firstly, the improbability of a general shift back to vocational and professional education evidencing any of the other three (noninstrumental) epistemologies. While disciplinary, constructivist and emancipatory epistemologies may be expected to provide firm foundations for generating telling arguments against instrumentalist educational approaches, their general incompatibility with the contemporary cultural context does not suggest any widespread move back to any of them.

We might also though, and secondly, note that there are suggestions of a shift in the contemporary cultural context, which is making it less compatible with instrumental epistemology. Theorists of contemporary globalisation have argued in different ways that globalisation is importantly characterised by a dynamic tension between forces for globalising homogenisation (cultural convergence) and those for localising heterogenisation (cultural pluralisation) (Powell and Steel 2011). In recent decades, the forces for homogenisation have been seen to prevail over those of heterogenisation (Halliday 2012), which has favoured the highly systematic epistemology of instrumentalism. There may, though, be seen as occurring now a shift to more localised forms of globalisation, foregrounding diversity, flexibility and situational responsiveness, with which educational approaches evidencing instrumental epistemology would not be congruent (Castells 1996). Contemporary information technology may also be seen as moving in the same direction: away from massified approaches to communication towards more tailored, localised approaches, often within globalised frameworks (Castells 1998). More broadly, knowledge, value and action are also becoming more contextualised (Bagnall 1999), in a direction that is increasingly at odds with instrumental epistemology. It is arguable that the privatisation of risk, performance and responsibility to progressively lower levels of social organisation (and ultimately to individuals) – which is an important feature of contemporary globalisation – is also becoming more pronounced and hence contra-indicative of instrumental epistemology (Edwards 2012). In essence, the globalised *pluralisation* of social meaning is undermining the ascendancy of globalised homogenisation (Edwards 1997).

Such shifts, though, may be expected to have little impact on the overall incompatibility of disciplinary, constructivist and emancipatory epistemologies with the prevailing cultural context. On the other hand, they do admit the possibility of en emergent new educational epistemology – one we term *situational* – arising out of the old prevailing (instrumental) epistemology and hence taking on and reworking key features of that originating epistemology. The emergence of such a situational epistemology has been largely overlooked in contemporary educational theorisation, because it has been marginalised under the banner of sociological *postmodernity*

(Bagnall 1999; Briton 1996). The form of such an epistemology remains as yet unclear, beyond the speculative theorising in works such as those cited above. It calls, though, for further critical analysis to tease out its emerging characteristics.

6.9   Conclusions

In conclusion, we suggest that the analytical perspective presented here, at the very least, makes a case for the importance of underlying epistemologies to understanding, interpreting and responding to the ongoing criticism of the educational value of competence-based vocational and professional education. There may be further argument about the nature and boundaries of the epistemologies that are important in framing such criticism, and there may be further argument about the nature and boundaries of the educational approaches that each informs, but our analysis may be understood, at the very least, as demonstrating the importance of epistemologies *to* the debate.

Using that epistemological framework, the analysis outlined here points to the probable futility of attempts to develop hybrid versions of competence-based vocational and professional education in response to criticism of competence-based education from noninstrumental epistemological perspectives. It suggests that, in our continuing commitment to competence-based approaches to vocational and professional education, we should accept them, unalloyed, as the best that we can do in the circumstances. It suggests also, though, that continuing shifts in the prevailing cultural context and the weight of argument against instrumentalist approaches may, in due course, reach a tipping point, at which the cumulative weight of that argument would lead to the rejection of competence-based education and its instrumental epistemology and to the adoption of educational approaches evidencing an alternative epistemology. Intimations of a shift in the prevailing cultural context point to the possible generation of a new, *situational*, epistemology to take over the mantle of hegemony from the instrumental.

That conclusion points to the value of undertaking further theorisation and articulation of the changing cultural context and of the nature and possibility of a situational epistemology in response to the changes. Continuing critical attention to the nature and impact of competence-based approaches to vocational and professional education might also valuably be undertaken more systematically through the epistemological framework here presented.

References

Abdi, A. A. (2006). Eurocentric discourses and African philosophies and epistemologies of education: Counter-hegemonic analyses and responses. *International Education, 36*(1), 15–31.
Abel, G. (2011). *Rethinking epistemology* (Berlin studies in knowledge research, Vol. 1). Berlin: Walter de Gruyter.

Alexander, J. C. (1995). *Fin de siecle social theory: Relativism, reduction, and the problem of reason*. London: Verso.

Archer, M. S. (1995). *Realist social theory: The morphogenetic approach*. Cambridge: Cambridge University Press.

Ashworth, P. D., & Saxton, J. (1990). On 'competence'. *Journal of Further and Higher Education, 14*(2), 3–25.

Bagnall, R. G. (1993). Pluralising continuing education and training in a postmodern world: Whither competence? *Australian and New Zealand Journal of Vocational Education Research, 1*(1), 18–39.

Bagnall, R. G. (1994). Performance indicators and outcomes as measures of educational quality. *International Journal of Lifelong Education, 13*(1), 19–32.

Bagnall, R. G. (1999). *Discovering radical contingency: Building a postmodern agenda in adult education*. New York: Peter Lang.

Bagnall, R. G. (2004). *Cautionary tales in the ethics of lifelong learning policy and management: A book of fables*. Dordrecht: Kluwer.

Barnett, R. (1994). *The limits of competence: Knowledge, higher education and society*. Buckingham: The Society for Research into Higher Education & the Open University Press.

Bauman, Z. (1995). *Life in fragments: Essays in postmodern morality*. Oxford: Blackwell.

Biesma, R. G., Pavlova, M., Vaatstra, R., van Merode, G. G., Czabanowska, K., Smith, T., & Groot, W. (2008). Generic versus specific competencies of entry-level public health graduates: Employers' perceptions in Poland, the UK, and the Netherlands. *Advanced Health Science Education, Theory and Practice, 33*(3), 325–343.

Biesta, G. J. J., & Burbules, N. C. (2003). *Pragmatism and educational research*. Lanham: Rowman & Littlefield.

Blackham, H. J. (1968). *Humanism*. Harmondsworth: Penguin.

Briton, D. (1996). *The modern practice of adult education: A postmodern critique*. Albany: State University of New York Press.

Brookfield, S. (2005). *The power of critical theory: Liberating adult learning and teaching*. San Francisco: Jossey-Bass.

Brookfield, S., & Holst, J. D. (2011). *Radicalizing learning: Adult education for a just world*. San Francisco: Wiley.

Broudy, H. S. (1972). *A critique of performance-based teacher education*. Washington, DC: American Association of Colleges for Teacher Education.

Brown, B. J., & Baker, S. (2007). *Philosophies of research into higher education*. New York: Continuum.

Carr, D. (1993). Questions of competence. *British Journal of Educational Studies, 41*(3), 253–271.

Castells, M. (1996). *The rise of the network society*. Cambridge: Blackwell.

Castells, M. (1998). *The information age: Economy, society and culture* (End of millennium, Vol. III). Oxford: Blackwell.

Collier, A. (2004). *In defense of objectivity and other essays: On realism, existentialism and politics*. London: Routledge.

Collins, M. (1987). *Competence in adult education*. Lanham: University Press of America.

Collins, M. (1998). *Critical crosscurrents in education*. Malabar: Krieger.

Dewey, J. (1966). *Democracy and education: An introduction to the philosophy of education*. New York: Free Press.

Dooley, P. K. (1974). *Pragmatism as humanism: The philosophy of William James*. Chicago: Nelson-Hall.

Dreyfus, H., & Kelly, S. D. (2011). *All things shining: Reading the Western classics to find meaning in a secular age*. New York: Free Press.

Edwards, R. (1997). *Flexibility, lifelong learning and a learning society*. London: Routledge.

Edwards, R. (2012). Lifelong learning: A postmodern condition? In D. N. Aspin, J. Chapman, K. Evans, & R. Bagnall (Eds.), *Second international handbook of lifelong learning: Part two* (pp. 151–162). Dordrecht: Springer.

Edwards, R., & Usher, R. (1994). Disciplining the subject: The power of competence. *Studies in the Education of Adults, 26*(1), 1–14.

Elias, J. L., & Merriam, S. B. (2005). *Philosophical foundations of adult education* (3rd ed.). Malibar: Krieger.

Fairfield, P. (2009). *Education after Dewey*. London: Continuum International.

Feyerabend, P. (1978). *Science in a free society*. London: Verso.

Field, J. (1991). Competency and the pedagogy of labour. *Studies in the Education of Adults, 23*(1), 41–52.

Finegold, D., & Soskice, D. (1988). The failure of training in Britain: Analysis and prescription. *Oxford Review of Economic Policy, 4*(3), 21–43.

Gamble, J. (2003). Retrieving the general from the particular: The structure of craft knowledge. *Journal of Education, 29*, 73–92.

Giddens, A. (1990). *The consequences of modernity*. Cambridge: Polity.

Gonczi, A., Hager, P., & Oliver, L. (1990). *Establishing competency-based standards in the professions*. Canberra: Australian Government Publishing Service.

Hager, P., & Gonczi, A. (1991). Competency-based standards: A boon for continuing professional education? *Studies in Continuing Education, 13*(1), 24–40.

Halliday, J. (2012). The economic control of lifelong learning. In D. N. Aspin, J. Chapman, K. Evans, & R. Bagnall (Eds.), *Second international handbook of lifelong learning: Part two* (pp. 743–758). Dordrecht: Springer.

Hanfling, O. (1981). *Logical positivism*. New York: Columbia University Press.

Hansen, D. T. (2007). *Ethical visions of education: Philosophies in practice*. New York: Teachers College Press.

Harris, R., Guthrie, H., Hobart, B., & Lundberg, D. (1995). *Competency-based education and training: Between a rock and a whirlpool*. South Yarra: Macmillan.

Hart, M. U. (1992). *Working and education for life: Feminist and international perspectives on adult education*. London: Routledge.

Henry, M., Lingard, B., Rizvi, F., & Taylor, S. (2001). *The OECD, globalisation, and education policy*. Amsterdam: IAU Press/Pergamon.

Hirst, P. H., & Peters, R. S. (1970). *The logic of education*. London: Routledge/Kegan Paul.

Hodge, S. (2007). The origins of competency-based training. *Australian Journal of Adult Learning, 47*(2), 179–209.

Hodge, S. (2010). Trainers and transformation: Facilitating the 'dark side' of vocational learning. *International Journal of Training Research, 8*(1), 53–62.

Hodge, S. (2011). Learning to manage: Transformative outcomes of competency-based training. *Australian Journal of Adult Learning, 51*(3), 498–517.

Hodge, S. (2014). Transformative learning as an 'inter-practice' phenomenon. *Adult Education Quarterly, 64*(2), 165–181.

Hodge, S., & Harris, R. (2012). Discipline, governmentality and 25 years of competency-based training. *Studies in the Education of Adults, 44*(2), 155–170.

Howlett, J. (2013). *Progressive education: A critical introduction*. London: Bloomsbury Academic.

Hutchins, R. M. (1968). *The learning society*. Harmondsworth: Penguin.

Hyland, T. (1993). Competence, knowledge and education. *Journal of Philosophy of Education, 27*(1), 57–68.

Hyland, T., & Winch, C. (2007). *Guide to vocational education and training*. New York: Continuum International.

Illich, I. D. (1973). *Tools for conviviality*. New York: Harper Colophon.

Innovation and Business Skills Australia. (2013). *The VET practitioner capability framework implementation guide*. East Melbourne: Author.

Jackson, N. (1993). Competence: A game of smoke and mirrors? In C. Collins (Ed.), *Competencies: The competencies debate in Australian education and training* (pp. 154–161). Curtin: Australian College of Education.

Jesson, D., Mayston, D., & Smith, P. (1987). Performance assessment in the education sector: Educational and economic perspectives. *Oxford Review of Education, 13*(3), 249–266.

Jones, L., & Moore, R. (1993). Education, competence and the control of expertise. *British Journal of Sociology of Education, 14*(4), 385–397.

Kuhn, T. S. (1970). *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Lyotard, J.-F. (1984/1979). *The postmodern condition: A report on knowledge*. (G. Bennington & B. Massumi, Trans.). Manchester: Manchester University Press.

Mansfield, B., & Mitchell, L. (1996). The job competence model. In B. Mansfield & L. Mitchell (Eds.), *Towards a competent workforce* (pp. 49–69). Aldershot: Gower.

Marginson, S., & van der Wende, M. (2007). *Globalisation and higher education* (OECD Education working paper No. 8). Paris: OECD Publishing.

McMurchy-Pilkington, C. (2008). Indigenous people: Emancipatory possibilities in curriculum development. *Canadian Journal of Education, 31*(3), 614–638.

Mezirow, J. (1978). Perspective transformation. *Adult Education Quarterly, 28*(2), 100–110.

Monchinski, T., & Gerassi, J. (2009). *Unrepentant radical educator: The writings of John Gerassi, edited and with interviews by Tony Monchinski*. Rotterdam: Sense.

Monette, M. (1979). Need assessment: A critique of philosophical assumptions. *Adult Education Quarterly, 29*(2), 83–95.

Moore, R. (1987). Education and the ideology of production. *British Journal of Sociology of Education, 8*(2), 227–242.

Mulcahy, G. D. (2009). What should it mean to have a liberal education in the 21st century? *Curriculum Inquiry, 39*(3), 465–486.

Mulder, M., Weigel, T., & Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states: A critical analysis. *Journal of Vocational Education and Training, 59*(1), 67–88.

Muller, J. (2000). *Reclaiming knowledge: Social theory, curriculum and educational policy*. London: Routledge.

Newman, M. (1999). *Maeler's regard: Images of adult learning*. Paddington: Stewart Victor.

O'Hear, A. (1981). *Education, society and human nature: An introduction to the philosophy of education*. London: Routledge/Kegan Paul.

Patterson, C. H. (1973). *Humanistic education*. Englewood Cliffs: Prentice-Hall.

Powell, J. L., & Steel, R. (2011). Revisiting Appadurai: Globalizing scapes in a global world – The pervasiveness of economic and cultural power. *International Journal of Innovative Interdisciplinary Research, 1*, 74–80.

Rizvi, F., & Lingard, B. (2010). *Globalising education policy*. London: Routledge.

Rorty, R. (1989). *Contingency, irony and solidarity*. Cambridge: Cambridge University Press.

Ryan, R. (2011). *How VET responds: A historical policy perspective*. Adelaide: National Centre for Vocational Education Research.

Schecter, D. (2010). *The critique of instrumental reason from Weber to Habermas*. New York: Continuum International.

Sulkowski, L. Z. (2013). *Epistemology of management* (New horizons in management series, Vol. 2). Frankfurt am Main: Lang GMBH.

Tovey, M. D., & Lawlor, D. R. (2004). *Training in Australia: Design, delivery, evaluation, management* (2nd ed.). Frenchs Forest: Pearson Prentice Hall.

Tuxworth, E. (1989). Competence-based education and training: Background and origins. In J. Burke (Ed.), *Competency based education and training* (pp. 10–25). Lewes: Falmer.

Valett, R. E. (1977). *Humanistic education: Developing the total person*. St. Louis: C.V. Mosby.

van der Klink, M., Boon, J., & Schlusmans, K. (2007). Competencies and vocational higher education: Now and in the future. *European Journal of Vocational Training, 40*(1), 67–81.

van der Wende, M. (2011). The emergence of liberal arts and sciences education in Europe: A comparative perspective. *Higher Education Policy, 24*(2), 233–253.

Wheelahan, L. (2007). How competency-based training locks the working class out of powerful knowledge: A modified Bernsteinian analysis. *British Journal of Sociology of Education, 28*(5), 637–651.

Williamson, T. (2000). *Knowledge and its limits*. Oxford: Open University Press.

Winterton, J. (2009). Competence across Europe: Highest common factor or lowest common denominator? *Journal of European Industrial Training, 33*(8/9), 681–700.

Winterton, J., & Haworth, N. (2013). Government policy and human resource development. In G. Saridakis & C. Cooper (Eds.), *How can human resources drive growth?* (pp. 74–99). Cheltenham: Edward Elgar.