Chapter 3
Knowledge Claims and Values in Higher Education

Monica Kennedy

Abstract The integration of practice-based learning experiences in higher education is somewhat problematic—traditional ideas about what knowledge is, where is resides, how it is justified and its relative certainty and simplicity are at odds with the notions of practice-based knowledge. Practice-based knowledge is recognised to be personal, contested, contingent and reliant upon individual meaning making while university traditions have built on the assumption that knowledge exists as discrete facts developed distributed and institutionalised in good research by expert authorities.

This chapter highlights the role of personal and institutional epistemological theories in the perpetuation of traditional curriculum in the academy and in so doing, goes some way to unravelling the reasons behind resistance to practice-based approaches in the sector. The validation of a wider definition of 'what counts' within the academy can act to reduce the concerns about the changing role and nature of HE in the contemporary, knowledge intensive world and invite HE institutions to come to recognise that they are not the sole arbiters of knowledge or the sites of its production. The status of epistemologies based in assumptions about the certainty and simplicity of knowledge and its justification in expert opinion, is eroding in response to contemporary issues, and knowledge which is complex, developed and validated in practice is increasingly recognised within and across sectors as vital for institutional performance and the development of graduates appropriately prepared for the modern world.

Keywords Practice-based learning · Epistemology · Learning and knowledge · Higher education pedagogy · Sectoral differences

M. Kennedy (✉)
University of Canberra, Bruce, ACT, Australia
e-mail: monica.kennedy@anucollege.edu.au

M. Kennedy et al. (eds.), *Practice-based Learning in Higher Education,*
Professional and Practice-based Learning 10, DOI 10.1007/978-94-017-9502-9_3

Practice-Based Learning and Epistemological Difference

The ways that we understand what knowledge is and how it is developed is intimately tied up with the ways that educational systems produce and recognise it. Epistemological differences underpin disciplinary and sectoral distinctions in pedagogical and research design and practice. In this chapter, the bases upon which knowledge is understood and validated in higher education is analysed and discussed. The chapter introduces a typology through which epistemological differences are illustrated and compares these differences across traditions in higher education practice.

'What counts' as learning and knowledge within educational institutions has entertained theorists and practitioners alike for decades (Gallacher and Feutrie 2003, p. 79). Issues of quality (Houston 2008), conceptions of curriculum (Fraser and Bosanquet 2006) and of pedagogy (Oval 2003), expectations of the role of higher education (Lomas 1997), and of vocational education in contemporary society each contribute to modes of legitimation (Maton 2000) of educational knowledge.

Recent preoccupations with the integration of work and learning in the higher education curriculum (Billett 2009; Boud and Solomon 2001) (as opposed to long-held traditions in this regard in vocational education) (ANTA 2000) have inspired a reconsideration of the role of higher education institutions. While the value of integrating work and learning through structured Higher Education work experience programs is widely recognised and theorised (Billett 2006; Boud and Solomon 2001; Symes et al. 2000), there is relatively little exploration of what these differences are and how the different ways that understandings of knowledge impact on the practice and experience of the practicum experience. If Higher Education is about the development and dissemination of knowledge that is validated by good research, how does practice-based learning fit? How can knowledge that is internally validated by learners through meaning-making, based on a person's (or group's) evaluation of evidence or reasoned justification, tentative and contested and complex, continent and relative, be credible within such an environment? The legacy of Higher Education is a narrow epistemological stance that is structured in ways that trivialise practice-based knowledge and learning.

In this chapter Hofer and Printich's (1997) construct of epistemological theory is used to articulate this problem of traditional and differential knowledge claims within the sector and describe the relationship between these claims. We observe a shift in which the privileging of intellectual fields within disciplinary areas in higher education is in conflict with contemporary pressures for increased university performance (Alexander 2000), interdisciplinary (Brint et al. 2009), problem-based and professionally oriented education. These pressures work to invite a shift that has the opportunity to broaden the role and scope of HE providers, so that more epistemologically inclusive conceptualisation of 'what counts' as knowledge (and what is seen as legitimate learning) are able to be introduced with legitimacy in the academy.

Knowledge Claims in the 'Practice Turn'

The relationship between knowledge claims and education and organisation is an active area of research (Cook and Brown 1999; Hartels et al. 2006; Hofer 1999; Kelly et al. 2000; Paavola and Hakkarainen 2005). While the terminology is contested and rather dense, discussion of knowledge claims (or epistemological beliefs, theories, postures, stances, resources or ways of knowing (Hofer and Pintrich 1997; Niessen et al. 2008)), provides an important opportunity to investigate the bases upon which knowledge is validated and privileged. Given the nature of the topic, it is unsurprising that consensus on the labelling, boundaries and definition (Hofer and Pintrich 1997) of the construct through which personal and collective epistemologies may be explored has not yet been achieved.

A number of substantive theories about the characteristics and dimensions of personal epistemological theories have been developed and tested over the past half century. While these adopt differing metaphors in their representations (positional and developmental (Perry 1970 in Hofer and Pintrich 1997), material (Kelly et al. 2000), vocal (Belenky et al. 1986 in Hofer and Pintrich 1997), or active (Lave and Wenger 2000; Wenger 2004)), they each contribute to what is now a rich resource informing discussion about the ways in which individuals conceive of the bases of knowledge and the nature of knowing (Hofer and Pintrich 1997, p. 119).

Generalised differences between individual, disciplinary and sectoral epistemological beliefs have long been the subject of inquiry and theorising. The treatment of epistemological beliefs is sometimes criticised as being 'static and mechanical' (Niessen et al. 2008, p. 27), but at the same time, contemporary perspectives provide postures of knowing and knowledge that are presented as fluid and 'enactive' (Niessen et al. 2008). At the focus is an understanding that epistemological beliefs underpin the ways that that learning is conceived and enacted by students, the role of the teacher in the act of learning, and the ways that knowledge is manipulated in preparation for student learning (these priorities are evident, for example, in Hartels et al. 2006; Hofer 1999; Hofer and Pintrich 1997; Niessen et al. 2008; Paavola and Hakkarainen 2005).

Hofer and Pintrich's comprehensive (1997) review of the research on epistemological theory and research in education leads them to propose a construct of epistemological theory which is limited to '…individuals' beliefs about the nature of knowledge and the process of 'knowing' (p. 117). Whilst defining the construct they also acknowledge the links between individuals' personal theories of knowledge and its development and learning and teaching. The Hofer and Pintrich construct may be represented as two (epistemologically aligned) continua in each of the two core areas—the nature of knowledge and nature of knowing. The four continua are illustrated below in Fig. 3.1:

This figure suggests that the nature of knowing and the nature of knowledge can be understood in different ways, and that these ways exist on a continuum from those that acknowledge one knows because on is able to witness evidence that demonstrated by experts to those that acknowledge that one knows when one makes

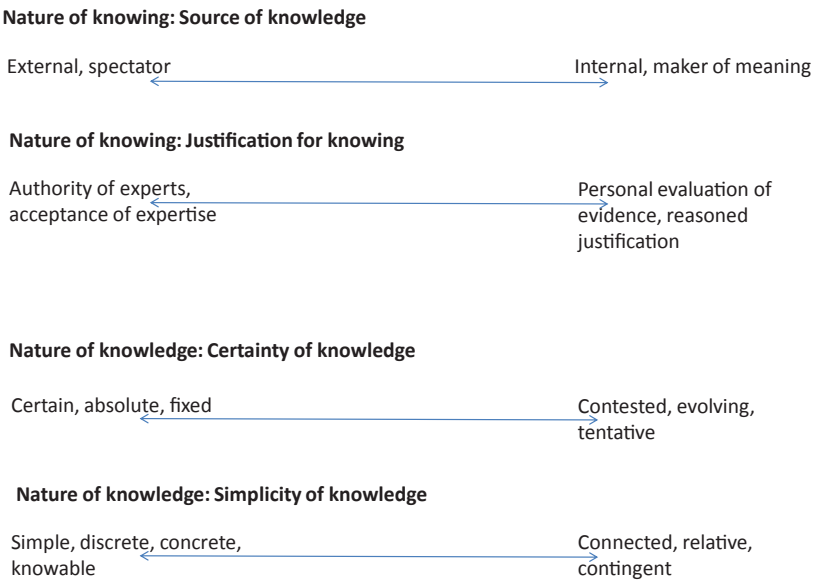

Fig. 3.1 Dimensions of epistemological theories—from Hofer and Pintrich (1997)

sense of information and is able to evaluate is and justify what is known through reasoning. The figure also illustrates the ways that knowledge is defined, either as something fixed, certain and reliable and which can be represented in simple, discrete facts or (at the other end of the spectrum) as something that is quite tentative, that may be challenged, or that may change and develop. Knowledge in this understanding is contingent and reliant upon that with which it is connected.

The epistemological theories construct, while developed in reference to individuals, can be used to inform discussion about the various claims that underpin and constrain practice in educational institutions. The construct allows consideration of the various ways in which academic practice has traditionally produced and reproduced knowledge within a particular domain. Through this typology it is possible to locate discussions about the fundamental nature of knowledge in discussions of learning, of learning at work and of learning in HE.

Hofer and Pintrich's representation of epistemological theories provides a plausible explanatory foundation from which to advance discussion of the relationship between epistemology and the implementation of practice-based approaches in the academy. It invites consideration of the relationships amongst epistemology, pedagogy and institutionalised resistance to practice-based approaches in the academy. These dimensions sit comfortably alongside Gibbons et al.'s (Gibbons et al. 1994) notions of Mode 1 and Mode 2 knowledge because of their common representation of epistemological differences underpinned by the relationship between the way that knowledge is derived and applied. Gibbons et al. differentiate between traditional forms of knowledge produced through problems set and investigated within the academy using 'good science' (Mode 1 aligned with the left hand side of the

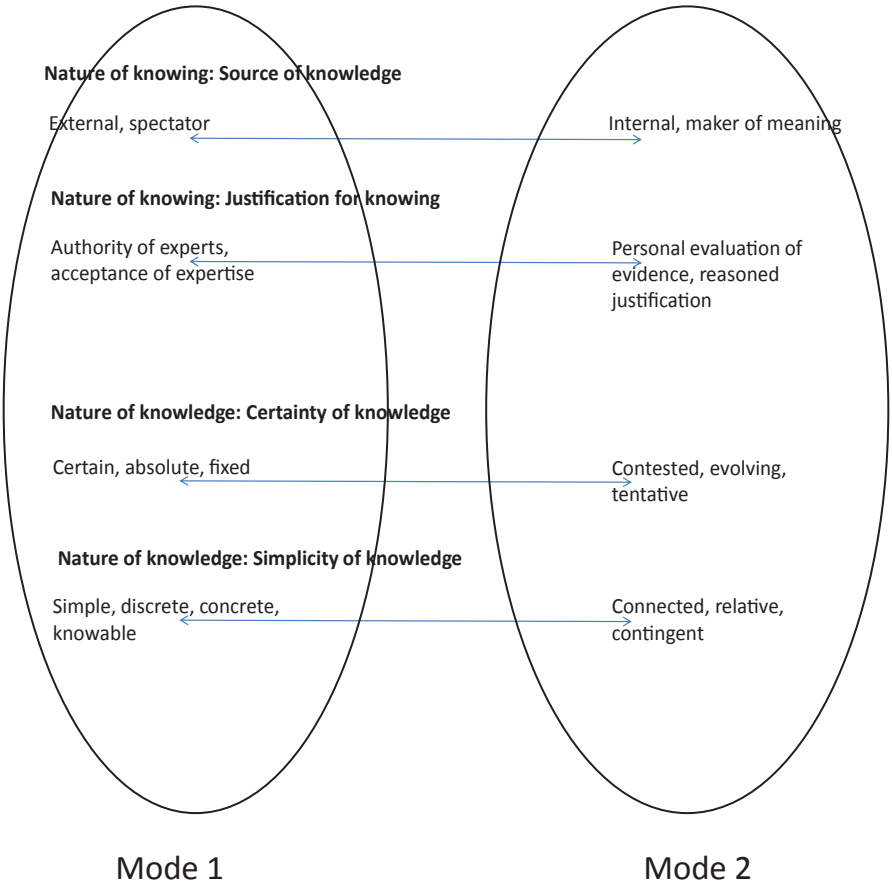

Fig. 3.2 Aligning the nature of knowing and knowledge with Gibbons et al. Modes of Knowledge

Hofer and Pintrich construct) to a new form which '…operates within a context of application in that problems are not set within a disciplinary framework…[which require] the close interaction of many actors…[and encompass] a wider range of criteria for judging quality' (Mode 2 aligned with the right hand side) (Fig. 3.2).

Similarly, the Hofer and Pintrich construct may be used to investigate further the Biglan-Becher (Neumann 2001) typology of disciplines which identifies four disciplinary variants (hard-pure, science; hard-applied, technologies; soft-pure, humanities and social sciences; soft-applied, professions based in the social sciences). The hard-pure domain aligns with the left hand side of the Hofer and Pintrich construct while the soft-applied aligns along the right. These relationships are discussed further in the next section of this chapter.

The practice-based learning 'bandwagon' assumes an epistemological posture aligned with the right-hand side of the Hofer and Pintrich construct. Based, as it is, in conceptions of 'experiential learning', the practice lens (Corradi et al. 2010)

highlights the connectedness (Piaget 1954 in Stevenson 2000) of knowledge, its production within (and between) individuals, the evaluation of truth claims in terms of relevance, situation and value (Lave and Wenger 2000). The epistemological assumptions inherent in socio-cultural and situated-learning theory (evident in COP work) align along the right hand side of the typology (knowledge contested and connected, knowing internal and based on justification of beliefs). Activity systems (Engestrom 2001eg.),, experiential learning (Kolb 1984), incidental and informal learning (Marsick and Watkins 2001), and the constructivist view of learning (Bromme and Tillema 1995) similarly represent knowledge and knowing in terms aligned with dimensions on the right hand side of the construct. Valuing of practice-based learning requires a recognition of knowledge as actively constructed within a social and cultural context. The cognitive constructivist and sociolocultural perpectives are prominent in contemporary learning theory where "learning and the development of expertise as a knowledge construction process … takes place in reciprocal interaction between individuals and their sociocultural environment." (Tynjala et al. 2003, p. 153 with reference to Billett 2002, 2006).

Put simply, the knowledge assumptions that underpin practice-based learning are aligned with those on the right hand side of the typology and reflect those described by Mode 2 knowledge types.

Traditions, Disciplines and Dissonance

In the representations of knowledge and knowing depicted in the figures above, the relationship between epistemological underpinnings and research and pedagogical practice are apparent. The traditions in validating and perpetuating knowledge claims based in one dimensions of the construct highlight deep and enduring preferences for a certain type of knowledge and a certain type of pedagogy. In the case of higher education, this enduring preference is for Mode 1 knowledge—knowledge produced by experts through empirical research, reproduced and presented to novices for their consumption.

Using Hofer and Pintrich's core structure of epistemological theory, and overlaying Gibbons et al.'s Modes of Knowledge and the Biglan-Becher typology, the relative positions of traditional university epistemological theory in use is posited in the two frames below, as depicted in Fig. 3.3:

In this Figure, the traditions of higher education are illustrated as being linked with an epistemological view in which knowledge is recognised as certain and fixed, presented as discrete and concrete and validated through research and reproduction within the university. In the top, right-hand corner, on the other hand, a view that recognises knowledge as contingent, tentative and relative is presented as linked with practice and application.

The construct that is depicted in Fig. 3.4 highlights not only the types of knowledge that are traditionally produced and legitimised within the academy, but also the pedagogies that those epistemologies underpin. For example, when knowledge

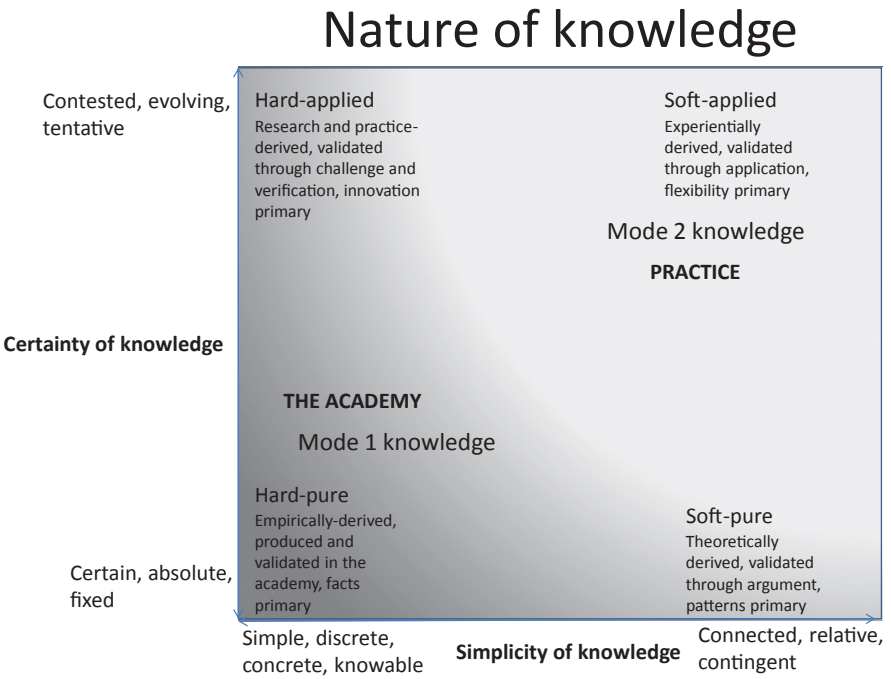

Fig. 3.3 The nature of knowledge—applying Hofer and Pintrich (1997), the Biglan-Becher typology (in Neumann 2001) and Gibbons et al.'s Modes of Knowledge (Nowotny et al. 2006)

is recognised as that which is derived empirically, produced and validated in the academy and where facts are knowable, concrete and discrete pedagogy designed to reproduce it privileges the authority of experts and favours a didactic curriculum which is dependent on the transfer of knowledge from expert to novice and assessment designed to ensure that canonical knowledge has been retained.

The proposed position of the HE sector on the epistemological theory construct above is supported by research and theory in psychology, education and organisation studies. For example, Hartels et al. (2006, p. 135) in their study of the epistemological beliefs of teachers in higher education found that a social constructivist view (one aligned with an internal/connected view of knowledge) was rare in the academy. Participants in the study "…believed that knowledge is secure, and probably more importantly, they believed in authority" (p 137). Kelly et al. (2000) illustrate the epistemological framing of university oceanography as based in concrete/external conceptions of knowledge through discussion of observation, interpretation and evidence. Tynjala et al. (2003) explore the separation of theory from practice in traditional higher education curriculum and the separation of higher education from 'expertise' based in problem-solving. Bates (2008) discusses a need for change in universities from the traditional treatment of propositional knowledge and knowledge as a commodity to its treatment as 'knowledge-in-action' and Scott (2010) highlights the primacy of the academic in determining the disciplinary outcomes

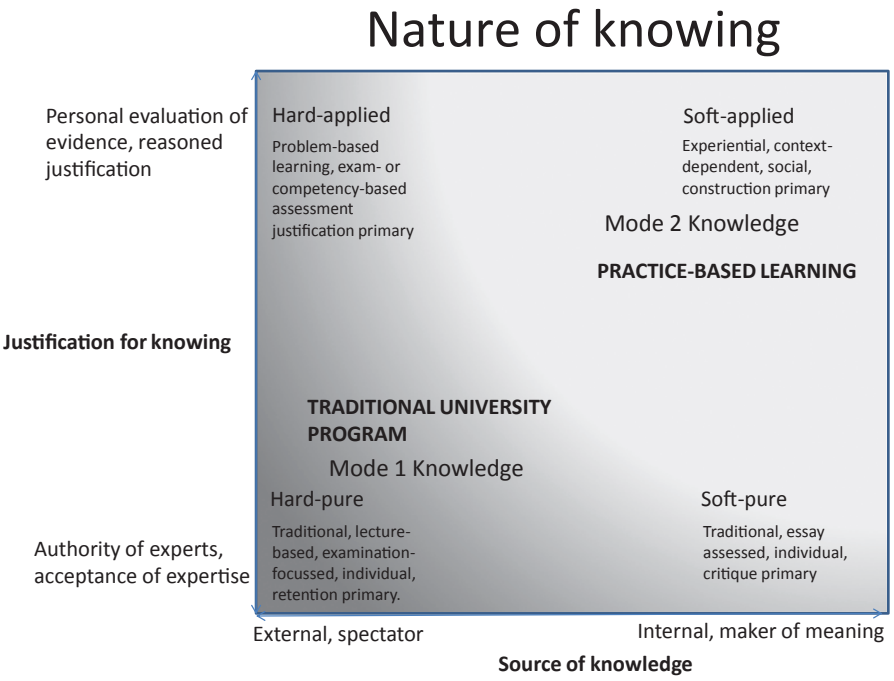

Fig. 3.4 The nature of knowing—applying Hofer and Pintrich (1997), the Biglan-Becher typology (in Neumann 2001) and Gibbons et al.'s Modes of Knowledge (Nowotny et al. 2006)

and interests of study in the university. Gallacher and Feutrie (2003) discuss the impact of the production, reproduction and validation of concrete/external knowledge in the academy on systems of assessment and accreditation of learning and Ballantyne, Bain and Packer (Ballantyne et al. 1999) show 'The lecture method … to pervade all disciplines as the dominant mode of teaching' (Neumann 2001, p. 136).

These are somewhat surprising findings given contemporary philosophers' perspectives of relativity and the move in educational literature toward a social constructivist epistemology. However, universities have long been the "…jealous guardians of knowledge and its production" (Pitman 2009, p. 227), producing Mode 1 knowledge (Gibbons 1994, p. 820); knowledge which is '…produced through research, is validated within the academy, is codified in academic curricula, and is re-produced through traditional methods of teaching and learning' (Gallacher and Feutrie 2003, p. 80). In universities, individual lecturers take their own constructions of what constitutes knowledge, learning and curriculum (Fraser and Bosanquet 2006) and standards within the academy (Lomas and Tomlinson 2000), and utilise these constructions in the development of their identities, relationships and practices. Universities and the academics within them in the performance of their work and in the maintenance of their identities, produce and reproduce a culture in which this knowledge is privileged.

It is perhaps the secrecy that is inherent in the '…experiences of working practice' (Suchman 1995, p. 56) that reinforces university lecturers' epistemological views on the simplicity and certainty of knowledge and the justification for knowing as residing in the expert—the distance with which work is observed by academics attempting to bring professional experience into the classroom ensures that university teaching about practice is simplified and stereotyped (Suchman 1995, p. 59).

Rather than secrecy, Gallagher and Feutrie (Gallacher and Feutrie 2003, p. 80), frame the issue as of one of status, 'Mode 1 knowledge … enjoys high status within the academy. Knowledge which is not of this kind has been seen as being of lower status'. Pitman too (2009, p. 237 also citing Taylor and Clemans 2000) refers to the hierarchical ranking of knowledge in which traditional, formal learning is superior to informal learning and in which a university degree in a formal educational environment is seen to impart to students knowledge, skills and attributes that are somehow lacking in those who learn in informal ways. This hierarchical effect is further evident in the tiering of Universities based upon their offerings—'liberal' universities finding a place amongst the most prestigious of institutions, whilst those offering vocationally oriented degrees taking a place in lower tiers of the higher education market (Lomas 1997). The impact of status on the identity of university faculty contributes to the perpetuation of epistemological privilege and the enduring preference for traditional pedagogies in HE.

However, this view of knowledge in higher education is currently under enormous pressure to change. The drivers for change to a broader epistemological base (and one that accommodates a greater recognition of knowledge in the right hand side of the Hofer and Pintrich typology) are ones that will encourage and fortify the practice turn: a knowledge based society and economy in which Mode 2 knowledge is recognised as critical; an agenda of social justice and social inclusion (Gallacher and Feutrie 2003); the demand for graduates who are 'job ready' (BCA 2008; DEST 2002); the growing sophistication of conceptions of knowledge in educational and organisational theory (Moravec 2008; Niessen et al. 2008; Stacey 2001) and research; and mounting evidence of the value of constructivist and sociocultural perspectives in learning theory (Billett 2002).

Knowledge Claims and Confluence

Perhaps surprisingly, it has been the HE sector which has experienced (and in many cases led) challenges to the very role of the academy. That challenge has prompted careful consideration of niches occupied by higher education institutions within the educational suite of services. The strategic provision of vocationally oriented qualifications in the 'new' (Gallacher and Feutrie 2003) or '3rd generation' universities across the developed world in the 1970s and 1980s prompted concern about role of the University and accommodated a reconsideration of the roles of HE in the post-secondary market.

In the new universities (and increasingly in the sandstone institutions) differing constructions of 'what counts' as knowledge and of the role of the institution have underpinned differentiation between the liberal, theory-driven programs of research and study (mathematics, pure sciences, arts) and those that are vocationally oriented. However, while research on the epistemological theories underpinning traditional practice in HE is quite well established (as illustrated above), little equivalent research is available to inform discussion of epistemological theories in use in vocationally oriented education. Certainly, the vocational education and training (VET) sector has long traditions based in apprenticeship structures which privilege experiential learning and suggest a closer alignment with dimensions on the right hand side of the Hofer and Pintrich typology, competency-based standards and assessment structures evident in many western qualification frameworks tie practice into dimensions on the left-hand side. Higher education programs designed to provide professional education (nursing, teaching, accounting, for example) similarly rely upon standards and standardised performance criteria and provide frameworks that link with assumptions of knowledge as fixed, stable and concrete.

In addition to the inclusion of structured work-based learning in traditions of vocationally and professionally oriented pedagogy, evidence of the differing epistemological theories in practice is illustrated by workplace assessment and recognition of learning through practice. These approaches are more closely aligned with the validation of Mode 2 knowledge, that which is '…socially distributed, application-oriented, transdisciplinary and subject to multiple accountabilities' (Nowotny et al. 2006, p. 39). This practice-embedded knowledge is produced outside of the academy and is particularly evident in the workplace where workplace assessment allows validation through its use and usefulness.

The VET sector has a history in which epistemologies inherent in Mode 1 (the competency model providing an example of the influence of a belief in the simplicity and certainty of knowledge) and Mode 2, appear to coexist. This somewhat ambidextrous epistemological underpinning suggests that VET and professionally oriented educational institutions would be placed in the top-left hand corner in each of the Nature of Knowledge and Nature of Knowing models, stretching some way to the top right-hand side of the model, but anchored through competency and other standards to the top-left (Fig. 3.5).

The different ways in which knowledge is produced, reproduced, validated and communicated are represented in the table above. The various domains highlight the epistemological bases upon which differing approaches to teaching and learning built and illustrate how differences in these approaches are perpetuated through practice within and across disciplinary and sectoral divides (Fig. 3.6).

Epistemological distinctions between the liberal arts and professional and technical education (and the sectors in which they have traditionally sat) have differentiated individuals, disciplines, institutions and sectors from one another. However, across the developed world recognition of the learning in work is evident in formal National and HE policies since at least the mid 1980s (NBEET 1990 in Pitman 2009, p. 227; Gallacher and Feutrie 2003) and non-formal and informal learning to be recognised in all sectors and across sectors in line with the 2004 AQF guidelines

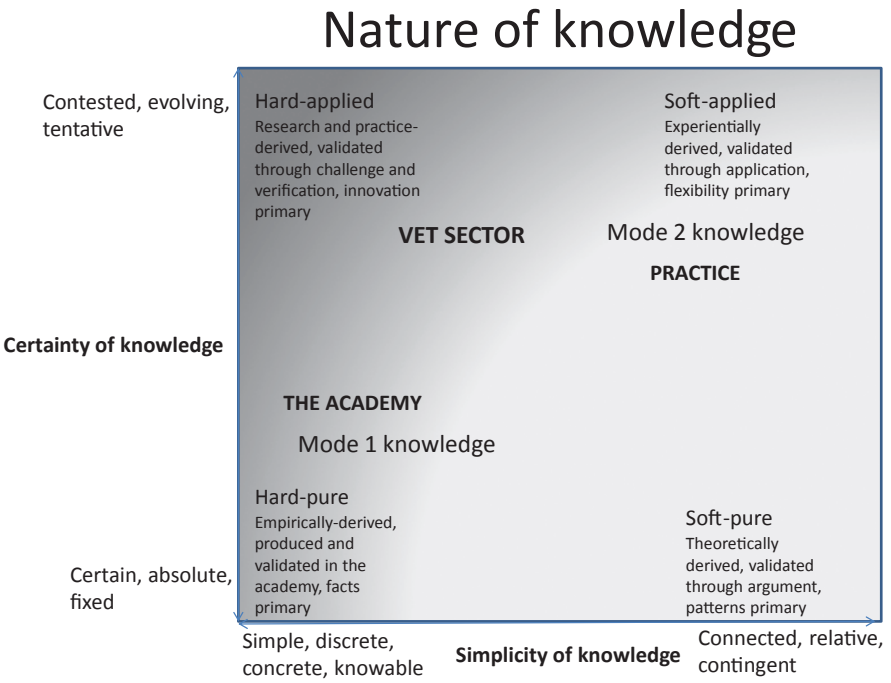

Fig. 3.5 Vocational and professional education and the nature of knowledge—applying Hofer and Pintrich (1997), the Biglan-Becher typology (in Neumann 2001) and Gibbons et al.'s Modes of Knowledge (Nowotny et al. 2006)

and agreed by the AVCC (Pitman 2009, p. 230). Pitman (Pitman 2009, p. 237) uses universities' recognition of prior leaning (RPL) policies as '…evidence that informal learning is not only accepted, but attains the same status, or rank, as learning achieved in a more traditional, formal environment'. While Pitman's (2009, p. 237) explanation for the growing acceptance of practice based learning through RPL as valid within the higher education sector is based on policy development and formal endorsement of these which lead to closer links between the VET sector and the HE sector, the reason may be somewhat more complex and more tightly tied to changing epistemological foundations to discourses within and across the sectors.

Epistemologically, RPL represents an important shift in higher education in that it recognises the need for *validation* of different knowledge claims within the education sector and while the academy receives some criticism for its perceived interest in people 're-shaping' their Mode 2 knowledge '…to fit the requirements of the academy'(Gallacher and Feutrie 2003) in order to gain credit, the RPL discussion is one which indicates a perhaps grudging, but positive step toward a broader epistemological stance in the academy.

The difficulties faced when bringing teaching practice based on constructivist epistemological beliefs to the academy are evident and have in recent times become the focus for rigorous educational and psychological research (Niessen et al. 2008).

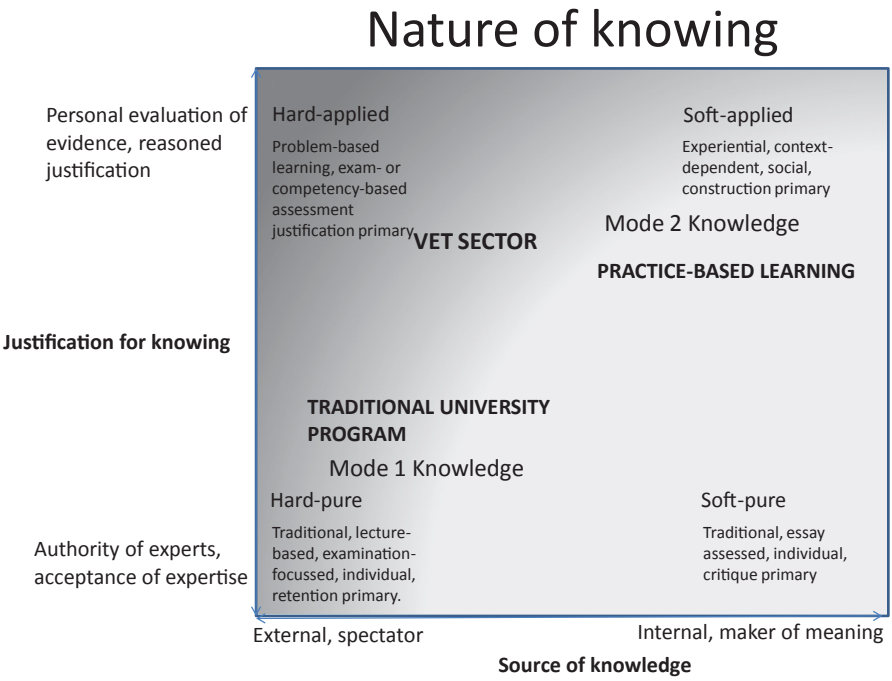

Fig. 3.6 Vocational and professional education and the nature of knowing—applying Hofer and Pintrich (1997), the Biglan-Becher typology (in Neumann 2001) and Gibbons et al.'s Modes of Knowledge (Nowotny et al. 2006)

Work on problem-based learning and resistance in the academy problematises the nature of epistemological belief and its development in teaching practice. In questioning the notion of a single epistemological view for individuals, they posit a more contextually based, dynamic, 'enactive' perspective on personal epistemology. Niessen et al.'s (2008) work (which also refers to studies by the psychologist Perry in 1968, Lyons in 1990 and Phillion and Connelly in 2004) where the relationship between teaching practice and epistemological belief is shown to be 'textured and complex'(p. 29) and for Niessen et al. at least, the relationship is fluid, emerging through enacting, interaction and dialogue in 'ever-changing webs of mutually defining elements' (p. 36).

Indeed, practice as a higher education participant is itself contested—academic practice (or practices; Gherardi 2010), is one in which academics collectively construct what is 'good' or 'bad' practice and regardless of attempts to delineate 'a practice' of academia, differing interests which have underpinned the traditional reluctance of faculty to act collectively (Riegle 1987, p. 59) continue to contribute to change in the sector.

Conclusions

It is the opportunity that practice-based learning has for bringing the student into the reality of work, within the boundaries of the practice and with organisational members that promises to ensure that the work of the university remains relevant to industry, to society and to the individuals who increasingly demand a vocationally focused and relevant education. Constructivist views of learning underpinned by broadening epistemologies "…provide important arguments for integrating education and work by emphasising the importance of the active role of the students and the integration of theoretical and practical knowledge" (Tynjala et al. 2003, p. 153).

A number of issues are raised in this chapter that invite further theorising and research. Firstly, in what ways are personal epistemological theory and organisational/industry culture co-constructed and reciprocal? Secondly, if personal epistemological theories are indeed enactive, what are the conditions under which they will respond to embrace practice-based knowledge? Thirdly, what are the implications for sectoral differentiation if the academy embraces wider epistemological foundations? And, finally, how do universities structure themselves vis-à-vis industry in order to align epistemological theories and delivery industry relevant knowledge?

The argument is made here that the epistemological differences that are constructed and reinforced in traditional learning settings within sectors as well as between them restrict the opportunity for appropriate education in contemporary environments. Important opportunities for higher education futures and standards exist in the broadening of the epistemological stance upon which credible and high-status knowledge is built. Practice-based learning approaches in higher education environments provide integration and reciprocation of value in learning and work and allow for more expansive, relevant and pedagogically appropriate experiences for learners across higher education environments.

Although the practice-based learning 'bandwagon' has been recently appropriated within higher education, there remains a range of difficulties associated with its integration and validation within the academy. However, the influences that press higher education institutions to accommodate broader epistemologies are real and requisite for performance in the contemporary educational, work and global environment. The recognition of the value of practice-based learning is creating a shift that makes fuzzy the boundaries between sectors, provides heterenogeity in the academy and provides an important opportunity for learning that is best suited for graduates in complex, changing and challenging modern times.

References

Alexander, F. .K. (2000). The changing face of accountability: Monitoring and assessing institutional performance in higher education. *The Journal of Higher Education*, *71*(4), 411–431.

ANTA (2000). *Learning for the knowledge society: An education and training action plan for the information economy*. Canberra: Australian National Training Authority.

Ballantyne, R., Bain, J., & Packer, J. (1999). Researching university teaching in Australia: Themes and issues in academics' reflections. *Studies in Higher Education, 24*(2), 237–257.
Bates, M. (2008). Work-integrated curricula in university programs. *Higher Education Research & Development, 27*(4), 305–317.
BCA (2008). *Submission to the Review of the Australian Higher Education System*: Business Council of Australia.
Billett, S. (2002). Toward a workplace pedagogy: Guidance, participation, and engagement. *Adult Education Quarterly*, *53*(1), 27–43.
Billett, S. (2006). Work, subjectivity and learning. In S. Billett, T. Fenwick & M. Somerville (Eds.), *Work, subjectivity and learning—understanding learning through working life* (Vol. 6, pp. 1–20). Dordrecht: Springer.
Billett, S. (2009). Realising the educational worth of integrating work experiences in higher education. *Studies in Higher Education, 34*(8).
Boud, D., & Solomon, N. (Eds.). (2001). *Work-based learning: A new higher education?* Sydney: Taylor and Francis, Open University Press.
Brint, S., Turk-Bicakci, L., Proctor, K., & Murphy, S. (2009). Expanding the social frame of knowledge: Interdiscipinary, degree-granting fields in American colleges and universities, 1975–2000. *The Review of Higher Education, 32*(2), 155–183.
Bromme, R., & Tillema, H. (1995). Fusing experience and theory: The structure of professional knowledge. *Learning and Instruction, 5*(4), 261–267.
Cook, S., & Brown, J. (1999). Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing. *Organization Science, 10*(4), 381–400.
Corradi, G., Gherardi, S., & Verzelloni, L. (2010). Through the practice lens: Where is the bandwagon of practice-bested studies heading? *Management Learning, 41*(3), 265–183.
DEST (2002). *Striving for quality: Learning, teaching and scholarship*. Canberra: Department of Education, Science and Training.
Engestrom, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualisation. *Journal of Education and Work, 14*(1), 133–156.
Fraser, S., & Bosanquet, A. (2006). The curriculum? That's just a unit outline, isn't it? *Studies in Higher Education, 31*(3), 269–284.
Gallacher, J., & Feutrie, M. (2003). Recognising and accrediting informal and non-formal learning in higher education: An anlalysis of the issues emergine from a study of France and Scotland. *European Journal of Education, 38*(1), 71–83.
Gherardi, S. (2010). Practising inclusion: Diversity matters! In S. Katila, S. Merilainen & J. Tienari (Eds.), *Making Inclusion Work: Experiences from Academia around the World* (pp. 191–200). Cheltenham: Edward Elgar Publishing Limited.
Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage.
Hartels, C., Gruber, H., & Lehner, F. (2006). Epistemological beliefs and their impact on work, subjectivity and learning. In S. Billett, T. Fenwick & M. Somerville (Eds.), *Work, subjectivity and learning—understanding learning through working life* (Vol. 6, pp. 123–140). Dordrecht: Springer.
Hofer, B. (1999). Dimensionality and disciplinary differences in personal epistemology. *Contemporary Educational Psychology, 25*(4), 378–405.
Hofer, B., & Pintrich, P. (1997). The development of epistemological theories: Beliefs about knowledge and knowing and their relation to learning. *Review of Educational Research, 67*(1), 88–140.
Houston, D. (2008). Rethinking quality and improvement in higher education. *Quality Assurance in Education, 16*(1), 61–79.
Kelly, G., Chen, C., & Prothero, W. (2000). The epistemological framing of a disciplines: Writing science in university oceanography. *Journal of Research in Science Teaching, 37*(7), 691–718.

Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice Hall.

Lave, J., & Wenger, E. (2000). Legitimate peripheral participation in communities of practice. In M. Crotty & S. B. Israelit (Eds.), *Strategic learning in a knowledge economy: Individual, collective and organizational learning process* (Vol. Butterworth Heinemann). Melbourne.

Lomas, L. (1997). The decline of liberal education and the emergence of a new model of education and training. *Education + Training, 39*(3), 111–115.

Lomas, L., & Tomlinson, K. (2000). Standards: The varying perceptions of senior staff in higher edeucation institutions. *Quality assurance in education, 8*(3), 131–138.

Marsick, V., & Watkins, K. (2001). Informal and incidental learning. *New Directions for Adult and Continuing Education*, *89*(Spring), 25–34.

Maton, K. (2000). Languages of legitimation: The structuring significance for intellectual fields of strategic knowledge claims. *British Journal of Sociology of Education, 21*(2), 147–167.

Moravec, J. (2008). A new paradigm of knowledge production in higher education. *On the Horizon, 16*(3), 123–136.

Neumann, R. (2001). Disciplinary differences and university teaching. *Studies in Higher Education, 26*(2), 135–146.

Niessen, T., Abma, T., Widdershoven, G., & van der Vlueten, C. (2008). Contemporary epistemological research in education: Reconciliation and reconceptualization of the field. *Theory and psychology, 18*(1), 27–45.

Nowotny, H., Scott, P., & Gibbons, M. (2006). Rethinking science: Mode 2 in societal context. In E. Carayannis & D. Campbell (Eds.), *Knowledge creation, diffusion and use in innovation networks and knowledge clusters: A comparative systems approach across the United States, Europe and Asia* (pp. 39–51). Westport: Greenwood Publishing.

Oval, R. (2003). Changing pedagogy: Contemporary vocational learning (No. Oval Research working Paper 03–12). Sydney: University of Technology, Sydney.

Paavola, S., & Hakkarainen, K. (2005). The knowledge creation metaphor—an emergent epistemological approach to learning. *Science & Education, 14,* 535–557.

Pitman, T. (2009). Recognition of prior learning: The accelerated rate of change in Australian universities. *Higher Education Research & Development, 28*(2), 227–240.

Riegle, R. (1987). Conceptions of faculty development. *Educational Theory, 37*(1), 53–59.

Scott, I. (2010). But I know that already: Rhetoric or reality the accreditation of prior experiential learning in the context of work-based learning. *Research in Post-Compulsory Education, 15*(1), 19–31.

Stacey, R. D. (2001). *Complex responsive processes in organizations: Learning and knowledge creation*. London: Routledge.

Stevenson, J. (2000). Working knowledge. *Journal of Vocational Education and Training, 52*(3), 503–519.

Suchman, L. (1995). Making work visible. *Communications of the ACM, 38*(9), 56–64.

Symes, C., McIntyre, J., & Society for Research into Higher Education. (2000). *Working knowledge: The new vocationalism and higher education*. Buckingham: Society for Research into Higher Education and Open University Press.

Tynjala, P., Valimaa, J., & Sarja, A. (2003). Pedagogical perspectives on the relationships between higher education and working life. *Higher Education, 46*, 147–166.

Wenger, E. (2004). Knowledge management as a doughnut: Shaping your knowledge strategy through communities of practice. *Ivey Business Journal*(January/February), 1–8.