

The RAVL symposium: New questions about work and learning

**John McIntyre, Clive Chappell, Hermine Scheeres
Nicky Solomon, Colin Symes & Mark Tennant**

In this symposium, members of the Researching Adult and Vocational Learning group at the University of Technology Sydney discuss new questions about work and learning they see as arising from the growing emphasis on learning throughout life and beyond formal educational settings. This trend recognises the workplace as an important site of adult learning, leading to questions about how we are to understand learning at work, yet it also fundamentally challenges the relationship of workplace learning to formal education, since institutions are expected to adapt themselves to the demands of the workplace and working life.

RAVL scholars are currently drawn to examine forms of 'work-based learning' and 'wholly work-based training' where the entire educational program is organised in the workplace and learning is negotiated around 'the curriculum of work' instead of the formal curriculum. This radical departure from traditional patterns gives a new degree of educational recognition to 'working knowledge', and partnerships between enterprises and educational providers become significant, as do questions about what influences are moving educational policy in this way.

The RAVL group is based in the Faculty of Education and a number of research associates in other universities. It draws expertise from developmental psychology, philosophy, adult learning, human resource development, educational theory, policy studies, political economy and applied linguistics. Further information can be found on the RAVL website at (www.ravl.uts.edu.au).

CONTEXT: POLICY, INSTITUTIONS AND KNOWLEDGE DISCOURSES

For well over a decade the educational policies of most OECD countries, including Australia, have been dominated by economic discourses that emphasise the need for all educational sectors to contribute to national economic imperatives. Embedded within human capital theories of economic performance, the policies of new vocationalism are grounded by the idea that economic performance is intimately connected to the level of skill and ability of a nation's workforce. In many ways, this policy position should have heralded a renaissance in educational institutions that have always laid claim to a close and explicit relationship with the world of learning and work. TAFE and the technological universities that emerged after the Dawkin's reforms to Higher Education in the late eighties have for the most part constructed their identity in terms of preparing their students for the world of work.

However, recent research suggests that these institutions are not experiencing any policy driven re-energisation of their activities. Indeed many commentators suggest that these institutions are in crisis (Grubb 1996, Shain & Gleeson, 1999, Chappell 1999). Some point to reductions in government funding and the insertion of more market focused, commercially oriented business practices into these institutions. Others suggest that increased competition in an increasingly privatised education and training market has also contributed to this crisis. While others point to the de-institutionalisation of learning brought on by the privileging of informal, workplace and organisational learning that takes place outside of formal education and training institutions (McIntyre & Solomon forthcoming).

While not denying the truth of these claims, in this symposium, we want to suggest that this crisis is also a consequence of the emergence of new knowledge discourses that have, in one way or another, disturbed traditional ideas about what counts as knowledge. These discourses, while emphasising the crucial importance of knowledge in contemporary societies (Castells 1993:15-21), at the same time, and somewhat paradoxically, question the adequacy and utility of the content, organisation, production and transmission of knowledge found in all modern educational institutions.

These discourses undermine modern understandings of knowledge by reversing the traditional binaries that once privileged one form of knowledge over its 'other'. Today, epistemological discourses appear to privilege knowledge constructed as practical, interdisciplinary, informal, applied and contextual over knowledge constructed as theoretical, disciplinary, formal, foundational and

generalisable. Or as Gibbons (1994) and Luke (1996) put it, there has been a significant shift in emphasis away from 'culturally concentrated' (academic) knowledge to 'socially distributed' knowledge.

Although there has been considerable discussion over why this shift in emphasis has come about there has, as yet, been very little focus on the consequences of this discursive shift for educational institutions, educational practitioners and learners. Yet these institutions and the people that work in them are in no small measure constructed by and through knowledge discourses. Therefore it seems highly likely that this contemporary re-construction of knowledge inevitably leads to a re-construction of educational institutions and the people that work in them.

In this symposium we examine these new knowledge discourses in order to surface the enabling and constraining effects these discourses have. In summary, we will explore three kinds of new questions about work and learning:

- *Knowledge*. What new knowledge discourses are emerging to challenge the adequacy and utility of the organisation, production and transmission of knowledge as it has been practised in modern educational institutions?
- *Institutions*. How do these new knowledge discourses challenge the foundations of vocational curricula based in assumptions about occupations and working knowledge? Do we need to re-construct educational institutions and the way people work in them?
- *Identities*. How do these changes challenge our existing models of learners and vocational professionals? What new pedagogies and curriculum models do they imply, and how does this foreshadow a re-thinking of institutions?

QUESTIONS ABOUT VOCATIONALISM AS A DISCOURSE OF POLICY

The trend for national systems of education to embark on policies of vocationalisation may not be new, but the rationale for such changes is new-linking systems of education into the economy, under the auspices of neo-liberalism. This has seen the winding back of many government instrumentalities under a generalised policy of fiscal stringency and the subjection of public goods such as education and welfare to the forces of the market (Marginson, 1999). And this is at a time when the demand for such goods has never been higher. In the case of higher education, this demand, which continues to be unmet, stems from a number of factors.

One is the dramatic change to the labour market fuelled by the forces of globalisation and information technology (IT). The former has seen the de-industrialisation of many western economies, including that of Australia, and the location of productive activity in developing nations, in south east Asia, in Latin America. IT has been equally devastating in its impact, and led to the extinction of many jobs in the manufacturing and commercial sectors. Suffice to say IT has destroyed many more jobs than it has created. Those it has, have been in the "knowledge industries", that emergent sector of the economy in which the main 'terms of trade' are information and epistemological commodities-broadly defined as everything from e-commerce through to genome project.

It is the emergence of this "knowledge capitalism" (Burton-Jones, 1999) that has helped to revive the significance of higher education for the economy, and led to a style of vocationalism wherein the links between employment and knowledge are more overtly expressed and are articulated in different ways. Although much has been written about the changes which higher education has undergone in the last two decades, there is dearth of commentary about the degree to which universities have become vocationalised and have moved away from the liberal ideals that characterised them in the immediate post-war period. These ideals were forged in the nineteenth century, around the thoughts of John Stuart Mill and Henry Newman. They saw the universities as asylums from the 'real world', where the development of the inner self was championed, and the professions were shunned. Although this became a smokescreen for preserving what were essentially elitist institutions, it did become a defining ordinate for a certain form of university polemic. This held out for an institution that was not accountable to either the economy or the professions but could be, in its 1968 versions at least, an arena of oppositional thought (Symes, forthcoming).

The truth is, of course, that universities were never chapter and verse incarnations of the liberal ideal but, in various ways, were always garnished with a certain amount of vocationalism (Usher,

forthcoming). They contributed to the vocational formation of the individual in an indirect way, through courses of study that fostered general intellectual and ethical capacities having application across a range of professional endeavours, from the public service to the church. This has been superseded by a more direct vocationalism, where there is closer accommodation between study and work.

The most overt manifestation of this "new vocationalism" is in the new faculties that were established during the 1980s and 1990s. The bulk of these were in areas such as teaching, nursing, policing in which relevant training was previously conducted in industry-specific colleges and also new areas such as tourism, business, information technology, communication studies, sports and leisure studies. These represent growth areas of employment in the post-Fordist economy, that is more dependent on symbolic and numerical analysis, of the kind, university graduates were thought most able. Moreover, universities now promote themselves through their "symbolic economies" as belonging to the real world and as places that deal with useful, working knowledge, that obtain jobs for their graduates (See Symes, 1999). And even those areas, such as English and philosophy, which were once situated as the bastions of the 'liberal' university, have moved with the more pragmatic times and begun to reconfigure themselves in such a way as to emphasise their use-value.

As a general observation, then, work is beginning to become the epistemological organiser of the contemporary university, and usurping the position formerly held by disciplines and fields of study. The most flagrant expression of this trend is manifested in the work-based degree, in which study for a university credential is partially undertaken within the context of work. This is a more developed trend in the UK than it is Australia, where a number of universities have begun to experiment with courses of learning outside the shackles of the traditional disciplines and boundaries of knowledge, and which centre on the problems encountered in workplaces. As well as challenging the assessment and curriculum parameters of university study (Boud and Symes, forthcoming; McIntyre and Solomon, forthcoming), work-based learning challenges the boundaries between work and learning, and the sites in which these take place. It also obscures or, makes them more permeable, the boundaries between universities and other sites of learning with a more decidedly vocational face, such as TAFE colleges and private providers.

In one sense such innovations are the products of a discourse environment in which concepts such as flexibility and accessibility have become clarion calls, under which any thing, just so long as it satisfies market criteria, becomes possible in higher education (Robins and Webster, 1999). After all, what could be more flexible and accessible than learning in worktime, at work, as part of, and for work! Yet one has to ask, at what cost?

The irony of the present condition of higher education is that the press for vocationalisation has also been accompanied by the idea that education should be self-funded, should not be a burden on the public purse. Instead, education is part of the asset formation of the individual. Investment in education is no different from investing on the share-market, for it provides the dividend of increased career opportunities and guaranteed returns in the labour market. Yet in reality business and industry are obtaining the vocational formation of their employees for free, from the pockets of young people who, in return for the promise of jobs, need to amortise their futures against education.

Another cost, is the degree to which a vocationalised higher education system compromises those ideals at the heart of the liberal university, and which centred on the cultivation of certain political and civic ideals. The collapse of the university into the apprenticeship factory for the post-Fordist economy could place at risk the cultivation of these ideals, which were acquired in courses of learning that were not palpably utilitarian. In which case the university for the real world might not necessarily be one for a better world.

QUESTIONS ABOUT ACADEMIC KNOWLEDGE AND WORK-BASED LEARNING

Work-based learning is one expression of the 'new vocationalism' in higher education that has many similarities with developments in vocational education and training generally. Work-based learning needs to be understood as one set of knowledge discourses that is currently emerging to challenge traditional conceptions of the university. Work-based learning leads us to consider the discursive practices that have both contributed to its emergence as well as those that contribute to the production of new kinds of academic subjects.

Work-based learning awards have particular characteristics. There is a shift to *work as the curriculum* (from a curriculum designed around disciplinary knowledge to a curriculum designed around work). It

is negotiated since the curriculum design and delivery is worked out among several parties-the university (academic adviser), the learner, the organisation and a workplace supervisor. It is individualised since individual learners design their own program drawing on their current and projected work knowledge and experiences in consultation with their workplace supervisor and academic adviser.

Many promotional descriptions of WBL indicate the seductive appeal of WBL partnerships to various kinds of organisations and a diverse range of employees. For organisations, WBL offers a vehicle for linking individual learning to the development of corporate capabilities. It is a strategy for facilitating change and for retaining good employees. For employees, WBL provides an opportunity for gaining qualifications that incorporates their existing knowledge and experiences and that links learning to current workplace performance needs as well as to career development goals. Furthermore, WBL is seductive to universities, since it enables them to be collaborators with organisations rather than competitors in the educational qualification market, and it provides the university with the opportunity to establish long term relationships with corporations with a potential impact on all kinds of educational and research directions. Indeed this kind of reading of WBL reveals the attractive reciprocal gains for all participants.

Nevertheless this is not the only story to tell about WBL. Academics participating in WBL as well as those observing it at a (sceptical) distance, share an understanding of the variety of challenges that WBL presents to academic work. In this paper the focus is on a different kind of story - a story that exposes and explicates these challenges and the conditions within which they have emerged. We have confronted head-on the multiple conceptual and practical challenges to our identity, our institutional structures and work practices. All of these challenges have contributed to a disturbance of our understanding of the role and function of the university, our understanding of what is legitimate academic knowledge and what are academic standards, our belief in the resilience of our discipline and in our teaching and learning practices.

Yet it can be asked whether work-based learning such a radical challenge. It could be argued that WBL is just a natural extension of the increasing emphasis on professional vocational practice in higher education programs. We suggest that the argument (that WBL signifies the end of higher education as we know it) ignores the complexities around existing academic practices and the numerous other challenges faced by higher education institutions and academics, and propose that WBL draws attention to a radical shift in understandings about 'legitimate' knowledge and learning.

We would argue that WBL exemplifies many of the tensions in contemporary academic work that are a consequence of the changing relationship between contemporary knowledge and the university. These changes have meant that the university is becoming more open within its internal structures as evident in the increased number of cross-faculty courses and cross-disciplinary institutes and centres. But it is also more open in its relationship with the outside world as seen in the increasing number of entrepreneurial and research relationships with industry and government bodies. These openings are both cause and effect of the reduction in status of universities as primary producers of a particular kind of knowledge as well as the loss of their monopoly position as certifiers of competence in knowledge production (Solomon & Usher 1999). These losses not only have a symbolic significance, but also have a considerable number of practical consequences.

In WBL, the practices associated with the 'openness' of its organisational and curriculum structures (both within the academy and in its external relationships) present many of the challenges to the academy, to academics and to learners. It is useful to speak of the *discretion* or lack of it that is a feature and outcome of the partnership and curriculum processes around WBL. The more typical workplace learning episodes, such as professional placements and learning contracts, usually sit discretely within conventional course structures and understandings about academic knowledge and learning. In other words, these episodes are usually located within the boundaries of a subject or a project and therefore sit discretely within well-rehearsed and familiar structures that are accompanied by equally familiar teaching and learning practices. Furthermore, arguably, in these cases, the power or right of deciding the scope of these embedded workplace learning episodes, still resides with academics and within the academy. Accountability lies with the boundaries of the academy and the disciplinary community.

None of these applies to WBL. Academics involved in WBL no longer have the sole right to decide what is to be learnt or how it is to be learnt. The accountability is no longer self-referential but extends into the boundaries of the workplace. Moreover, at the macro-level, the primary point of departure is not a conventional area of knowledge or learning but rather work, the workplace and the learner. In

WBL the structural arrangements, as well as the sequence of learning events, begin with the learners and their workplace and then look to the university. Subject units become subordinated to the program driven by the nature of work. This is in contrast to more conventional courses, which tend to begin with the university and its conceptions of what is legitimate knowledge, before moving to the workplace and the learner.

A related concept is the *co-production of knowledge* that goes with the change in the discretionary practices of the academy and the loss of singular control of WBL awards, which are based on partnerships. The establishment, management and processing of these partnerships is a collaborative one involving many different kinds of relationships. The award is initiated by and organised around a contractual partnership between the university and an organisation. This is then complemented by a contractual agreement with each learner as the learners write themselves into the partnership with an individualised learning program that has been negotiated in partnership with an academic and a workplace manager. Furthermore work-based projects are supervised by both the workplace and the university. All of these relationships, processes and 'products' have to take into account the different social structures, histories and understandings about knowledge and learning of each of the various partners.

The process of developing a WBL partnership and a WBL program involves working with rather than ignoring these differences. This is not to argue that in conventional learning experiences the learning process is a non-interactive or uncontested one. Such an argument ignores the way the processing of new knowledge always connects with the learners' existing experiences and knowledge. However in WBL, these processes are visible and indeed part of the learning experience. In other words the negotiations and integrations are necessarily 'on the table'.

Moreover the 'partnership' model actually foregrounds the different relationships through which the curriculum unfolds. The use of the word 'partnership' with students is not part of the conventional discourses of higher education learning. Those discourses reflect and contribute to a kind of unilateral control (Heron 1988) by the academy which is symptomatic of a model of learning that is hierarchical and authoritarian. On the other hand, the 'partnership' discourse suggests a more equitable decision-making process.

However the more democratic drift in WBL is not necessarily an unproblematic one. Indeed we would argue that the collaborative processes in the co-production of knowledge involve many layers of politics and contested power relations (see also Garrick & Kirkpatrick 1998). These emerge because of the 'openness' and 'relational' nature of WBL where the merging of the different discourses, of the different views on what is legitimate knowledge, of different agendas and expectations are, not surprisingly, sites of contestation. For example, while academics may understand that the development of critical thinking and reflective practitioners should be a central feature of post-graduate study and of contemporary work, this may not be shared by the workplace management or by the learners' supervisors. Furthermore a workplace supervisor may not have an interest in working with the employee in a learning arrangement.

But in addition, WBL is also a site and exemplar of the new power relationships and resistant practices within the university itself. The radical nature of WBL encourages a degree of scrutiny by the university and by academics who are concerned about the quality and standards of university awards that are tied into organisational performance and productivity needs. Frequently in the development of more conventional courses, there is less scrutiny and therefore less need for argument about the quality or standards of the particular modes of learning, the 'content' of subject units or the appropriateness of assessment practices. Furthermore the transdisciplinary nature of WBL awards at times provokes a disciplinary territorialism as a counter-reaction. This is manifested at a practical level in the efforts, by some, to foreground a particular body of disciplinary knowledge in individual's WBL programs and at a conceptual level in the efforts to diminish the significance of the relationship between the mode of learning in WBL and the content of that learning. These struggles can be understood as part of a 'healthy' academic debate on what counts as academic learning but they also have powerful material consequences - for example on the kind of advice that academics provide on the 'content' of the learning program and on the assessment of individual's programs where judgements are made about level of the award based on its disciplinary content.

Together the different positions of the participants, the flexibility of the programs (in both content and mode), the changes in the discretionary practices of academics, and the emerging complex power relationships all have implications not just for curriculum structures and practices but also for the macro-structures within which the curriculum is 'contained'.

QUESTIONS ABOUT VOCATIONAL INSTITUTIONS

One implication of the development of work-based learning awards in universities is the challenge to the legitimacy of the established knowledge discourses that have defined and maintained educational institutions. There is an argument that those Australian universities and technical and further education institutes sharing a common history in technical education are approaching if they are not already experiencing a crisis of legitimacy, where their monopoly over the transmission and regulation of vocational knowledge is being broken down.

We need to see the obvious parallel between the wholly-workbased vocational learning based on the ANTA 'training packages' and the wholesale trend of universities to develop wholly -work-based degree programs in partnership with corporations. Our argument is that this cannot be simply sheeted home to policies of corporatising the public sector so that it is eventually more responsive to a society that is internationally competitive in economic terms. Much analysis emphasises the neo-liberal impetus of the state's restructuring activities, letting institutions bound off the bureaucratic leash into an entrepreneurial marketplace. So beyond policy inventions, how far is the valorisation of workplace learning motivated by changes in the workplace and particularly the knowledge demands of contemporary work captured by the supposed 'knowledge economy'.

In short, are new knowledge discourses emerging to challenge the way that working knowledge has been thought of in the past? To what extent is there a legitimacy crisis of vocational institutions that is due to changes in contemporary working knowledge as well as (and in interaction with) the politics of the lean and mean competitive state in a globalising economy? I suggest this is a real conundrum worthy of analysis, for there are some neglected aspects to the debate that arises from the thesis that 'training packages' and the customisation of work-based learning degrees are mainly to be understood as a policy demand of governments as they intervene to re-shape institutions to make them more responsive to the impacts of globalisation on national economies, their politics and social institutions. Is the increasing valorisation of the workplace as a site of learning just a policy solution to a range of problems that both employers and institutions face or something more profound?

We need to ask again how curriculum institutionalises knowledge and regulates it - particularly knowledge that is deemed to be technical or vocational in its connection to occupations. Curriculum is currently a neglected focus for analysing the restructuring of institutions that has been going on for some time through educational policy, and it provides a perspective on the rise of forms of wholly work-based programs. Nicky Solomon and I have put forward a 'de-schooling vocational knowledge' thesis (McIntyre & Solomon in press) that outlines how the very concept of knowledge codified in curriculum is under siege, and indeed that new forms of knowledge production are leading to working knowledge being 're-codified' in terms of workplace practices, with many implications for the concept of vocational teaching especially the emergence of new VET professionals who are able to work across institutional boundaries.

Though there has been a lot of attention given to the logic of the 'knowledge economy' as 'new economy' there is as yet little attention by VET commentators to the destruction of old knowledge codes that wholly-work-based training implies. So it may be useful to ask what does the 'de-schooling' of vocational knowledge entail and why is this the Trojan Horse by which publicly-funded institutions might be dismantled in the new century, just as they were developed in the old? The focus has been on the stresses and strains of restructuring that has demanded more 'flexibility' and 'responsiveness' in the relationships between enterprises and institutions - TAFE institutes and universities alike. The neo-conservative nature of these policy reforms may have encouraged vocational educators reasons to resist change rather than ask what kind of adaptation might be needed to survive the changed conditions of 'working knowledge'-if indeed this is the case.

The debates about competency-based training occasioned by national policy intervention in Australia turned on issues of the desirability of such reforms, often judged from the perspectives of vocational educators and the subversion of their professional competence by imposed curriculum change. It is rare to hear it argued that the formal vocational institutions are in a deepening legitimacy crisis regarding their relevance and economic role.

Academics let alone vocational educators have never much liked the idea that they were protecting their own monopoly over certain kinds of knowledge just as skilled trades controlled margins for skill through apprenticeship in the 'old' blue collar occupations. The resistance to theorising knowledge stratification in vocational education now makes it harder for vocational institutions to see how the 'codification' of such knowledge is under threat by work-based learning. The notion of a 'knowledge

code' and the breaking down of a code needs some analysis. Without going back to the perspectives developed by Bernstein and other sociologists, the key point is that particular knowledges are constructed and organised and regulated through the curriculum in the interests of particular social groups. A key process, especially in respect of vocational or technical knowledge, is the formalisation of highly contextualised working knowledge in technical curricula - for example, the twenty types of clutches that the automotive apprentices used to have to learn about. This formalisation cuts off knowledge from its context of application and renders it abstract and general - and above all, remote from everyday, tacit and contextual application, and everyday informality in use. This is knowledge 'schooled' for transmission to the novice in the hope they will then be able to contextualise or 'apply' it in the workplace, when of course, they are credentialled to do so.

From a historical perspective, the shift to designing programs for the workplace and delivering them at work and in terms of learning at work represents a reversal of the formalisation of 'vocational learning' in technical and vocational institutes that has occurred over a period of massively expanded institutional provision in the post-war period. Hence the discovery of the 'informal learning' of the workplace as the 'real' site of learning, carried through to the informalising of vocational curricula (in training packages) is tantamount to a de-institutionalisation of vocational education.

The term 'formalisation' is a significant concept in understanding the way institutionalised vocational education is in crisis over work-based learning. A large amount of attention is being paid to 'informal learning in the workplace' as the antithesis of formal vocational education (eg Watkins & Marsick 1993, and in Australia Garrick 1998). The emphasis on informal learning can in fact take for granted the question of what it means to 'formalise' learning and adult education, and it can take for granted questions of what is learned and what counts as knowledge in the workplace.

There is a significant potential for misunderstanding the nature of work-based learning qualifications discussed by others in this symposium. This is not the same as informal workplace learning, though such a work-based qualification may utilise and indeed depend on informal learning. The significant point is that work-based learning awards *formalise work-place learning*, subjecting it to educational processing of various kinds, particularly through intensively negotiated curriculum and assessment practices.

We suggest that 'new and different kinds of boundaries provide the framing around work-based curriculum ... which does not become unbounded or de-regulated, that is, without any framing, but rather the framings and representations are different, locally specific, more complex, more contested and more fluid'. To labour the point, this is a *new institutionalisation* of vocational knowledge. This is the basis for some of my assertions later in the paper that work-based learning is not only 'de-schooling' traditional educational practices but activity 're-schooling' workplace learning through re-codifying workplace knowledge and reconfiguring the professional roles of vocational educators (McIntyre & Solomon 1998). Work-based learning can be seen as 'deschooling knowledge' in the sense of 'de-codifying' vocational knowledge as formal curriculum and, importantly, 're-codifying' it in terms of dynamic workplace knowledges (such as competencies). How this occurs, and with what relationship to practices utilising for corporate ends the 'informal learning in the workplace' or to workplace training activities, is an interesting matter.

So the question is, do we need to rethink our vocational institutions if their established curriculum codes are being undermined by forms of wholly-workbased learning? What other perspectives, such as economic ones, might help us to understand in what form these institutions might prove to be durable, if after all, developments such as the 'knowledge economy' drive increased demand for access to formalised vocational knowledge and their associated qualifications-at least for some advantaged clienteles, and at some private cost.

QUESTIONS ABOUT PROFESSIONAL IDENTITIES AND KNOWLEDGE

In this section we examine the effects of new knowledge discourses on the identities of a group of vocational education and training teachers and a group of workplace educators. Our examination is based on recent research involving an analysis of how educators working in different contexts construct and negotiate their working identities.

When vocational teachers speak of their work they place a great deal of importance on the industrial experience they bring with them to their teaching. They commonly speak of the importance of

'knowledge of industry', workplace knowledge', 'technical competence', knowledge relevant to industry' and their 'practical experience' of work, in their teaching.

By emphasising the practical over the theoretical, applied knowledge over academic knowledge, experiential knowledge over disciplinary knowledge and contextualised knowledge over generalisable knowledge vocational teachers construct an identity that is distinct from the identities of other educators. Unlike most university and school teachers, vocational teachers generally lay no claim over the academic knowledge represented in the disciplines that grounds much of the curriculum in higher education and schools. Rather they claim to specialised vocational knowledge and workplace expertise gained through their experiences in particular industries and occupations.

However the talk of vocational teachers also reveals that this claim to specialised, vocational knowledge and its application is also become deeply problematic. They speak consistently of the need to 'keep up to date' with industry and to maintain their 'industrial expertise'. Many also explain this need in terms of maintaining credibility with students.

This commonly expressed view suggests that vocational teachers believe their educational identity, particularly in the eyes of students, is dependent on their industrial expertise. In effect they use this industrial experience as a distinctive marker that confers legitimacy on their occupational identity. The discourse of industrial expertise therefore appears to do similar discursive work for vocational teachers as disciplinary knowledge does for many teachers working in universities and schools.

This similarity however is only a partial one. In the world of the vocational teacher the ability to 'keep up-to-date' is given additional importance because many of their students are not only learners but are, at the same time, workers. Thus they are able to make an immediate and on-going evaluation of the industrial expertise of the vocational teacher. The utility and currency of the vocational knowledge and skills that they share with students can be tested immediately by these students in their working lives. It is in this sense 'practical' knowledge and is judged not in terms of its claims to generalisable 'truth' as in the case of discipline-based subjects but rather its performativity in the workplace. Consequently, a vocational teacher's credibility as 'industry expert' is always open to question and further compounded by her location in an educational site rather than an industrial workplace.

This educational site puts considerable pressure on the discourse of industrial expertise that vocational teachers use to construct a legitimate educational identity. For this educational site is one characterised by different discourses and sense making constructions than those that circulate in modern workplaces. These educational discourses, for example, work to formalise 'industry knowledge' by deploying traditional curriculum technologies that compartmentalise knowledge into subjects, hierarchies, sequencing strategies and levels of achievement. They impose particular pedagogical and assessment practices into the learning process. And through these disciplining discursive practices the contextualised knowledge of work is re-represented as generalisable vocational knowledge of particular occupations.

As a consequence vocational teachers identities are in some senses fashioned across the discursive space that constitutes working knowledge as different from traditional knowledge. Vocational teachers use the discourses of working knowledge to construct a legitimate occupational identity that is different from the identity of teachers working in other sectors of the educational project. However, their location within modern education also means that vocational teachers draw on educational discourses and sense making constructions to legitimise their identity as professional educators. They undertake teacher-training programs that foreground traditional curriculum practices. They are encouraged to theorise their pedagogy through the discourses of educational psychology, sociology and academic research. Moreover, these discursive practices are based on traditional views of knowledge that privilege knowledge that is formal, theoretical, generalisable and foundational.

The workplace educators (called facilitators) discussed here have been drawn from within the ranks of their own organisation. These employees either worked for years on a production line, or they have been leading hands or supervisors. Now they are involved in moving from the production line to the meeting room - a shift from doing to talking. The shift to this site of work and learning by workers, and the valuing of new kinds of knowledge by managers and employers, is producing new kinds of identities. This (re)formation of social relations and identities coupled with new knowledge and modes of knowledge production are the focus of ongoing negotiation and struggle in the workplace.

This workplace is a manufacturing enterprise where the construction of the competent worker emphasises problem-solving, consultative committees, quality circles, formal and informal on the job

training etc all of which involve more and more talk as well as more reading and writing. The textualisation or languaging of the workplace is a significant shift in industrial work practices and works to discursively construct and value new kinds of work-related knowledge.

This is a company that brought in a new management team six years ago to restructure the previously family-run organisation. Management followed a now accepted pathway of developing a mission statement and a set of core values ie the establishment of a new culture; a way of thinking whereby particular social identities of workers are constructed, and related social practices which they were expected to learn, demonstrate and value, are outlined. (Gee, Hull & Lankshear, 1996). The mission statement and core values began a process of textualisation of the workplace where the mission and values were reproduced on factory walls; in training manuals as well as in company annual reports and the like. The workplace and the workers were being defined in particular ways. The mission or goals of the workplace could only be attained if work practices, constituted here as core values, were inscribed as part of the identity of each of the workers. The values of the workplace are the values, thus part of the 'being', of each worker.

A major change was the creation of a new section or department comprising a manager and five educators/facilitators whose function is to set up, organise and develop workplace teams. The changing subjectivities of these key people as they assume very new work roles is foregrounded as they struggle to reconstruct themselves: a struggle where they are positioned by management and by co-workers as well as consciously repositioning themselves. Within the unit the discursive construction of selves is a central activity as the educators/facilitators juggle new responsibilities and confusion about their power and a search for a secure location. One of the facilitators tries to explain their position in the organisational structure as:

'The unit manager comes under the production manager so he's higher than the plant manager, and we're supposed to come under him, but we are not higher than the team leaders. I don't think we're higher than the people on the floor. I think mostly my level's there on the factory floor.'

As they struggle with their own identities, there is a recognition that the human production line working towards the alignment of selves and work is not necessarily one with glitches which must be straightened out or solved by following the procedures in training manuals, but rather it could be seen as a site of on-going discursive construction of how and what to be in the new workplace. They constantly question and comment on what is going on. The facilitators realise that it is possible to work like this in a more postmodern condition. Their discourses include cries of confusion about their 'real place', but they actively use this as a flexible position whereby they try out the new and different.

That is, the facilitators see possibilities in hybridity. They are central players in the breaking down of boundaries; they are active subjects rejecting the fixed parameters and binaries of the 'old' work order' including notions of strict, linear pathways and traditional knowledge claims. This recognition of uncertainty is what may lead to outcomes which had not been envisaged. The facilitators are not a neat fit with clear lines of power and responsibility. However, to see this position as a (re) location with the potential to open up a space for different approaches to and processes of work, is part of the struggle for developing subjectivities which engender both feelings of insecurity and liberation.

Workers in industry are thus engaging in practices beyond the 'doing' or even the supervising of the 'doing' of the factory floor. As they move to the meeting rooms and their new facilitators' offices, they move from secure and comfortable traditional knowledge and practices bounded to a large extent by the materiality of the production line itself to working knowledge that is concerned with constructing and maintaining social relations through discourse work. It is not that the 'old' knowledge is no longer relevant, but rather that it is no longer enough. The walls of the factory floor no longer provide a bounded context for new work. The industry workers discussed here are people who are acutely aware of their changing identities. For the facilitators (and workers on the production line) it is not so much about how to work in teams and how to problem-solve and be participatory, but rather how to 'be' and 'do' in this context of new discourses and new knowledge.

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