epilogue

KNOWLEDGE ECONOMY, RISK SOCIETY AND HIGHER DEGREE RESEARCH TRAINING CURRICULUM

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Introduction

In Australia, as in other western nation states, higher degree research (HDR) students contribute significantly to the research activity of higher education institutions. The significance of this contribution has been well argued in the field of educational research, where postgraduate students constitute the largest single group involved in research in Australia (Holbrook, Ainley, Bourke, Owen, McKenzie, Misson & Johnson, 2000). Generally, HDR students enrolled in Faculties of Education tend to be “part-time, mature age, and typically established, mid-career education professionals” (Kenway, forthcoming, p. 9) Thus they tend to work on their own research projects, that is, projects that they consider to be professionally and/or personally significant under the guidance of individual supervisors.

In recent times, however, the research performance or productivity of HDR students has been questioned by funding authorities. This questioning has centred around: who undertakes HDR studies and in what disciplinary areas; what types of research training are provided, and how many students actually complete their studies over what length of time (DETYA, 2001a; Kemp, 1999a, 1999b). Thus the contribution of HDR students to institutional research productivity is no longer simply taken for granted.

In this paper we examine three factors driving Australian universities in general, and Faculties of Education specifically, to produce explicit research training programs, policies and curricula for HDR students. In general terms we consider these three factors to be: (1) Federal Government policies which link funding to performance outcomes (DETYA, 2001b; Kemp, 1999b), (2) imperatives of the knowledge or informational economy, and (3) the social construction of risk, as well as the knowledge (including instruments and techniques) assembled to manage risks associated with HDR productivity in uncertain times. In addition, we propose a tentative theoretical framework for analysing the production, distribution and consumption of HDR training knowledge/curricula in these new times. The purpose of our inquiry is analytical: it aims to raise new questions about HDR training curricula in the specific disciplinary field of educational research. We begin the paper by delineating Australian Federal Government policies on HDR training (DETYA, 2001b; Kemp, 1999a, 1999b). We then theorize these training imperatives by drawing on emergent conceptualisations of the knowledge
State policies on research and research training: Steering from a distance

HDR training in Australia is increasingly conducted in the context of a global knowledge economy, reduced state funding, increased public demands for higher levels of education, and mass enrolments of diverse student cohorts. It is within this context, that the Department of Education, Training and Youth Affairs (DETYA) produced the discussion paper New Knowledge, New Opportunities (Kemp, 1999a) and the policy statement Knowledge and Innovation (Kemp, 1999b). Both the discussion and policy papers locate higher education research and research training as "central to the Government’s reforms of the higher education system" (Kemp, 1999b, p. 3). This reform agenda works out of a policy consensus that the higher education research system has not been responsive to "the rapid changes taking place in the way knowledge is being generated and applied" (Kemp, 1999b, p. 3). The policy documents clearly link the rapid changes in knowledge generation and application to "two great research-based technological revolutions: in information technology and in biotechnology" (Kemp, 1999a, p. v).

Thus the re-visioning and re-structuring of higher education is increasingly understood in terms of national interests in relation to global economic performance (DETYA, 2001a, b). On this point, the Knowledge and Innovation document (Kemp, 1999b, p. 1) states:

> Competition is strengthening on a global basis and Australia's competitiveness and attractiveness to investors is increasingly determined by our relative knowledge capabilities. Research — as a key source of knowledge and new ideas — is central to success in the global knowledge economy.

Having delineated this national imperative, the discussion and policy documents urge for renewal of the higher education system in order to enhance Australia’s "global role as a creator and transmitter of knowledge" (Kemp, 1999b, p. 3). The limitations or "deficiencies in the current structure and performance of higher education research and research training" (Kemp, 1999b, p. 2) are identified as follows:

- government funding incentives do not sufficiently encourage diversity and excellence;
- research in our universities is too often disconnected from the national innovation system;
- there is too little concentration by institutions on areas of relative strength;
- research degree graduates are often inadequately prepared for employment;
- there is unacceptable wastage of private and public resources associated with long completion times and low completion rates for research degree students.

The training of HDR students receives particular attention in the Knowledge and Innovation policy statement. It is argued that research students constitute a major resource in terms of research productivity, academic renewal and dissemination of "knowledge and skills within and between the research and wider communities" (Kemp, 1999b, p. 17).

Moreover, some persistent concerns regarding the "quality and breadth of research training" are identified in the discussion document New Knowledge, New Opportunities (Kemp, 1999a, p. 9). These concerns have been raised by users of research training, namely graduate students and industry employers. These groups report that research training is often "narrow and limiting in its specialisation; poorly supervised and out of line with the needs and expectations of employers" (Kemp, 1999a, p. 9). Reform of the higher education sector, in order to re-address these ‘deficiencies’ and “reduce the high rates of drop-out and significant waste of both talent and investment”, is to be achieved by performance based funding imperatives (DETYA, 2000, p. 10). These new financial frameworks for research training include the Institutional Grants Scheme (IGS) and the Research Training Scheme (RTS). These schemes are designed to “recognise and reward those institutions that provide high-quality research training environments and support excellent and diverse research activities” (DETYA, 2001b, p. 4).

Specifically, the ostensible aims of the research training scheme (RTS) (DETYA, 2000, p. 12: DETYA, 2001a, p. 149) are to:

- enhance the quality of research training in Australia;
- improve the responsiveness of institutions to the needs of students;
- encourage institutions to develop their own research training profiles; and
- ensure the relevance of research degree programmes to labour market requirements; and
- improve the efficiency and effectiveness of research training.

Of particular significance is the performance driven nature of these new state funding arrangements. Thus, 50 per cent of funding for research training will be weighted on HDR completions, averaged on institutional performance for the past two years. As students complete or withdraw, their HDR places will be reallotted among institutions, using a RTS formula which reflects each institution’s performance. In order to ensure some measure of equity between the 38 public universities, given the established research profiles of the Group of Eight, “an adjustment package, comprising capping and regional protection, will apply during the transition period which has been set for three years from 2002 to 2004” (DETYA, 2001a, p. 9: 2001b).

These new state financial frameworks or performance-based funding schemes are already impacting on institutional arrangements for HDR training. For example, the measurement of HDR completions and progression rates has become part of the core administrative activity of all Australian universities (Considine, Marginson, ShaeBan & Knmnick, 2001; DETYA, 2001a). Indeed, some analysts have attempted to calculate institutional capital/resource (intellectual, material, social) investment against HDR performance measures. Broad moves in terms of such institutional productivity measurements are undertaken in the discussion paper, New Knowledge, New Opportunities. This Federal Government paper notes that the attrition rate for higher
degree research courses in 1997 across all Australian universities was calculated to be 34%, while the average time for PhD completions was nearly six years (Kemp, 1999a, p. 32; DETYA, 2000, p. 144). A more systematic exercise in measuring investment against HDR productivity is undertaken in a recent government-sponsored study of the 1992 cohort of postgraduate research students (Martin, MacLachlan & Karmel, 2001). This study established that by 1999 only 53% of the 1992 postgraduate research student cohort had completed the courses in which they had initially enrolled. In addition, 22% of equivalent study units undertaken by the 1992 cohort were “consumed by those who did not complete an award” (Martin et al., 2001, p. 2). At the same time, there appeared to be “considerable variability... across disciplines, gender, age, study mode and institutions” in terms of HDR performance measures, namely, completions, non-completions and progression rates (Martin et al., 2001, p. 22).

Under the new performance-based funding imperatives, universities are likely to have some autonomy and discretion in constituting HDR training policies and programs (DETYA, 2000, 2001a, 2001b). At the same time, the following factors are likely to regulate the content and form of research training programs:

- Universities will play an increasing role in teaching generic research and specialist disciplinary knowledge to larger cohorts of students.
- Universities will have an increasing role in training individuals to undertake research in non-university settings.
- Public funding for universities will not be able to meet demands for HDR places.
- HDR training in areas deemed by the state to be of priority (not directly linked to nation capacity building) will increasingly be self-funded, and/or funded from non-public sources.

In the context of the new knowledge economy, public universities constitute one of the few sites for foundational research training (see Constidine et al., 2001; Muller, 2000). Thus, one of the main contributions that they can make to the knowledge economy is to serve business by producing “first class public goods” (Constidine et al., 2001). This means that universities need to renew their capacity to undertake basic or theoretical research, and provide education and training in a broad general undergraduate and postgraduate curriculum. These two core activities have been eroded in recent times with substantial cuts to public funding support for universities. At the same time, if universities are to serve the needs of industry via research training, they need to “be highly business aware” (Constidine et al., 2001, p. 32). This does not mean that universities should operate as businesses. Rather it means that universities should provide the public goods (education and training of knowledge workers) that underpin the production of private goods by other agents “Once a university system ceases to produce first class public goods, it has missed the main contribution it can make to the nation’s short and long-term capacity in innovation” (Constidine et al., 2001, p. 32). In terms of HDR training this means ensuring that all students acquire the skills and knowledge to undertake research in diverse settings (including industry) and in the context of the new global knowledge economy (DETYA, 2001a).
These changes in the role and function of universities in a knowledge economy are captured in the current re-visioning of research and research training in Australian higher education (Kemp, 1999a, b). The integration of academic labour into the industrial economy has also impacted on potential ‘academic labour’ — those engaged in ‘research training’ Where once that training was seen as a form of academic apprenticeship, it now has to accommodate more diverse employment opportunities.

In addition to academic apprenticeship, research training now includes apprenticeship into commercial research, and a very important additional role in offering training in advanced research to experienced workers in the knowledge economy. Thus, where the original focus of research training was as a preparation for an academic career, there are increasing applications of this type of training to support the career development of knowledge workers (Taylor et al., under review). Here the entrants to the programs tend to be mid-career, and the focus of training is much more on what Boyer (1990) refers to as the scholarships of integration and application. This is research that has been authorised by both disciplinary and professional/industrial communities.

The following section examines the conditions of the global knowledge economy. As indicated earlier, new federal government policies and funding arrangements with regard to the conduct of research and the provision of research training are explicitly linked to the imperatives of the global knowledge economy.

**New times: Knowledge society, social uncertainty and risk**

A number of theorists have written about the knowledge society (Leadbeater, 1999), knowledge economy (Considine et al., 2001; Johnston, 1998), or informational society (Castells, 2000). Specifically these theorists argue that we live in new historical times characterised by specific forms of social organisation “in which information generation, processing, and transmission become the fundamental sources of productivity and power because of new technological conditions” (Castells, 2000, p. 21). While knowledge production and use have been crucial driving factors in all societies, what sets the current context apart from former times is that “knowledge is being applied to knowledge itself” (Drucker, cited Johnston, 1998, p. 1). The two defining characteristics of the global knowledge economy are the increased knowledge intensity of the processes of creation, production and distribution of goods and services, and the fact that economic processes are becoming increasingly integrated via electronic connectivity on a global basis (Considine et al., 2001; Johnston, 1998). Growth in knowledge intensity in all areas of production, distribution and consumption has led to growth in demand for ‘knowledge workers’ or ‘symbolic analysts’. Knowledge workers are considered to be highly skilled in “problem identification, problem solving and brokerage” (Johnston, 1998, p. 3). These skills are highly priced because they are difficult to duplicate and cannot be managed through a command control approach (Johnston, 1998).

In this context, knowledge is defined as: “a set of organised statements of facts or ideas, presenting a reasoned judgement or an experimental result, which is transmitted to others through some communication medium in some systematic form” (Bell cited in Castells, 2000, p. 17). Disciplinary specific knowledge, such as knowledge in the fields of science, is hierarchically organised as a coherent, explicit and systematically principled structure, while knowledge in the disciplinary fields of social science and humanities “takes the form of a series of specialised languages with specialised modes of interrogation and specialised criteria for the production and circulation of texts” (Bernstein, 2000, p. 157). By contrast to these explanations of knowledge, information is defined as “data that have been organised and communicated” (Porst, cited in Castells, 2000, p. 17). As indicated earlier, disciplinary knowledge production has been the preserve of universities, particularly during what has been described as the ‘golden era’.

The exponential growth in the volume and complexity of knowledge in practically every field of human endeavour and the electronic interconnectivity of knowledge-related industries has enormous implications for the conduct of research training in universities (Castells, 2000; Ungar, 2000). In what follows, eight broad conditions of the global knowledge economy are delineated. The objective is to map the terrain of literature on this topic in order to assess the impact of changing economic and social conditions on academic work. It also serves to contextualise Australian Federal Government policy responses to the conditions of the global knowledge economy, and its particular vision for research training in higher education institutions.

First, universities are no longer the sole and/or key sites or institutions for the generation of new knowledge (Clark, cited in Cowen, 1996; Johnston, 1998; Kemp, 1999a). As Muller (2000, p. 147) argues:

> the masculification of higher education in the developed countries had by the 1960s and 1970s extended an exponentially greater number of competent knowledge workers and potential researchers than the traditional take-up capacity in the higher education institutions. Traditional think tanks and research and development laboratories could absorb new forms of research-based bodies sprang up in the private sector, in non-governmental organisations and in civic advocacy forums.

Second, the exponential growth in knowledge related industries has changed the social conditions in which knowledge as a commodity is produced, sold/distributed and consumed. Lyotard (1985) has described these times of hyper-knowledge productivity as performativity. Under conditions of performativity, Lyotard (1985) argues that knowledge ceases to be an end in itself. Knowledge is not pursued in a search for truth or greater understanding/meaning. Rather, the collapse of the legitimating principle which links science via philosophy to the discovery of truth permits a redefinition of traditional science (Lyotard, 1985).

The destruction of this legitimating principle permits the subjugation of science, the university and social systems to the principle of “performativity”. ... If the meta-narrative which links universities to a search for the truth and which places academics/intellectuals as the elite guardians of that narrative has broken down, then quality — defining it and establishing it — is a matter for managerial expertise (Cowen, 1996, p. 257).
Third, the growth in knowledge industries (independent of, but networked with universities), as well as the conditions of hyper-knowledge productivity have constituted new modes of knowledge production, circulation and consumption. These new modes (described as Mode 2) complement rather than supplant disciplinary modes of knowledge (Mode 1) (Gibbons et al. [cited in Johnston, 1998; Hegarty, 2000]) distinguish between Mode 1 knowledge (disciplinary specific knowledge as described above) and Mode 2 knowledge. The second category of knowledge, Mode 2, is characterised as follows:

- problems substantially set and solved in the context of application;
- a transdisciplinary approach and resources;
- a heterogeneous set of skills and experience directed to knowledge production;
- weakly institutionalised, transient, and hierarchically organised forms; and
- quality control not only through internal peer review, but also against a wider set of ‘application’ criteria reflecting the wider social composition of the interested audience (Johnston, 1998, p. 16).

Fourth, specialist expert knowledge (Mode 1 and Mode 2) is encoded in highly complex symbolic forms and must be decoded or translated (pedagogised) in order to be accessible to those outside the specialist domains. At the same time, knowledge producers increasingly lack the time and/or resources to convert or translate new knowledge into a form accessible to non-specialist consumers. Thus, the pedagogising of knowledge is increasingly undertaken by agents of recontextualisation, that is, academics or educators engaged in designing HDR training curricula, and supervising doctoral candidates. This has implications for ‘what’ knowledge is available to be converted into pedagogic communication, ‘who’ (social division of agencies and agents) will undertake the work of pedagogising knowledge, and ‘how’ this knowledge is transformed into pedagogic forms.

Fifth, the volume and complexity of knowledge have escalated the entry and acquisition costs to every specialist knowledge domain. Universal or public access to state-sponsored education does not imply universal acquisition of knowledge. Indeed, the recent surge in private tutoring, out-of-school education, virtual learning communities, and extra-curricular activities reflects the market demands of consumers struggling to maintain their field position in the knowledge stakes. As Unger (2000, p 299) has argued:

> research on the knowledge gap hypothesis reveals that prior knowledge in an area is critical to understanding and assimilating new information in that area. Starting with conceptual anchors for training information, the gaining of knowledge in a field tends to follow a spiral model, with new bits added to prior accumulations. But the narrowing and differentiation of specialties means that the sheer number and diversity of conceptual anchors continue to multiply. As proliferating technical terms and ideas are overlaid with new facts and frequent revisions, specialty knowledge domains become forbidding to outsiders.

Sixth, the growth of specialised knowledge has led to a paradoxical growth in ignorance or decrease in the “degree of knowledge grasp” (Unger, 2000). In addition, one’s degree of grasp (the ratio of information the human intellectual can handle to the volume of information available) is quickly diminishing while one’s degree of ignorance is on a fast rise (Unger, 2000).

Seventh, the current period, described by Giddens (1990) as “reflective modernity”, is characterised by a loss of public trust in institutions and expert knowledge to solve human problems (See also comments above in relation to conditions of performativity.) Increasingly, the very conditions of knowledge production, dissemination and consumption are interrogated. As Kenway (forthcoming, p. 7) argues, these are times of questioning: “what is useful knowledge, how is it best produced, by whom and to what ends?”

Eighth, despite the loss of legitimacy or certainty that increased knowledge production can solve human problems, there is an increased demand for more rather than less knowledge growth in order to arbitrate the growing uncertainty and complexity of everyday life (Muller, 2000). However, the production of more knowledge does not lead to uncertainty reduction. Rather, it leads to heightened social indeterminacy and uncertainty (Jarvis, 2000; Muller, 2000). The term social indeterminacy describes new social conditions in which the exponential growth in the production and circulation of knowledge opens possibilities for self-determination, and at the same time leads to greater social complexity. Under these social conditions, the process of decision making for individuals and/or social groups becomes more risky and outcomes more uncertain (Nagett, 2000). These are indeed paradoxical social times. The production of knowledge designed to reduce uncertainty ironically constructs greater social complexity, and in turn leads to increased public demands for more knowledge to reduce the risky business of managing uncertainty (Muller, 2000).

Australian higher education generally, and HDR training specifically cannot remain insulated from the profound global changes taking place in the social organisation of knowledge production, circulation and consumption. Indeed, HDR training is increasingly viewed as the site/source for the skilling of new knowledge workers. Thus the content and form of this training is increasingly the subject of public scrutiny and accountability. HDR training is linked increasingly to research productivity and business/industry innovation in the knowledge economy. Under these conditions, HDR work can no longer be a private affair, undertaken by individual students in pursuit of their personal interests and conducted within the private supervisor-student pedagogical relation.

The following section discusses the strategies instigated by funding authorities and higher education institutions to restructure the organisation and conduct of HDR training. The focus is on institutional risk-talk in terms of managing knowledge workers and knowledge productivity in these uncertain times.

Knowledge economy, risk-talk and HDR training

In a culture of knowledge productivity or performativity, non-completion and/or slow completion of HDR studies constitutes a failure to perform. In other words, a university’s investment in research training and supervision, that is, the investment of intellectual, social and material capital, has been poorly risk-managed in terms of HDR...
productivity outcomes. In this performance-driven context, that is, a context of reduced state funding to universities, and increased demands for accessibility, accountability and productivity, academics are being asked to consider the risks associated with enrolling HDR students. These risks materialise when: (1) students do not complete on-time; (2) fail to complete postgraduate work despite substantial investment of intellectual, social and material capital/resources, and/or (3) transfer to another institution during the period of candidature and thus transfer intellectual and social capital, as well as Federal Government funding awarded to institutions on the basis of HDR completions.

In an attempt to manage risks associated with poor HDR performance outcomes, universities worldwide have instigated numerous structural or organisational changes, ranging from the development of HDR training plans and programs to the introduction of “audit” mechanisms to measure “teaching effectiveness”, “research quality” and “research output” (Delamont, Atkinson & Parry, 1997; Shore & Wright, 1999). Some researchers have argued that this “pervasive emphasis on external audit and quality assessment, mirrored by systems of internal quality assurance and control” has been an unwelcome development in the working lives of academic teachers and researchers (Delamont, Atkinson & Parry, 1997, p. 319; see also Davis, 1999; Kenway & Bullen, 2000). In broad terms, these researchers seem to be suggesting that the instruments of accountability that are being used to regulate research and pedagogic work in higher education impose models of organisation that are incompatible with traditional academic work. Such arguments stress that academic endeavours should not be measured by business tools as these are perceived to be derived from profit-driven mechanisms and hence inadequate for verifying academic labour (Davis, 1999, p. 7).

In addition, some critical policy researchers have taken issue with the term research training suggesting that it signifies narrow attention to skills acquisition. These writers prefer the term education indicating that it signals not only skills acquisition, but also the knowledge generation and enculturation components of HDR programs (Kenway, forthcoming). Insistence on this binary, however, may divert scholarly attention from the ‘pedagogising’ process whereby researcher knowledge is converted into research training knowledge (See also Deem & Brehony, 2000). It is via this pedagogising process that knowledge and skills which are inclusive of both generic capabilities and more specific occupational competencies are selected, organised and packaged as curricula. The latter include notions of habits of inquiry, critical, ethical, practical and innovative dispositions and demeanours.

Without doubt, academics have vested interests in contesting the raft of external accountability and audit measures introduced by funding organisations. After all, they are engaged in a struggle to define what constitutes university knowledge work, and consequently what constitutes the post-modern university (Cowen, 1996). Specifically, academics are fighting to define the material conditions of their daily work practices, that is, the conditions in which they research and teach in exchange for a wage (Cowen, 1996). Thus, arguments such as those proposed above about the adequacy of the measures or techniques introduced by the state to measure performance or productivity constitute part of the struggle within the field of higher education. However, such arguments or counter-discourses may have little effect given the profound changes to the organisation and conduct of academic work over the past decade (Cookrake & Stedman, 1999). Indeed, it is highly probable that “the next phase of Australian university development” may be “more formalised and professionally risk managed” (Gallagher, 2000, p. 38). One of the proposed modes of risk management for Australian universities is the adoption of “business-minded models of administration” (Nelson, cited in Allard, 2002).

Institutional risk-management talk about HDR training, performance-based measurements, and linkages to industry constitute new modes of professional conduct for knowledge workers. Risk-talk about performance-based productivity also constitutes new modes of social relations within and between universities and other knowledge industries in the context of a global knowledge economy.

‘Risk talk’ as a mode of professional HDR conduct

State demands for the professional management of risk necessitate knowledge production about risk, that is, the development of instruments and techniques to define what constitutes acceptable and unacceptable risks. Specific patterns of institutional order are generated by disciplinary regimes, that is, ensembles of rules or procedures for classifying what constitutes risk and danger in these new times of overt state regulation of HDR training and performance-based funding imperatives. Thus, new modes of social organisation in terms of HDR training are constituted through moral and intellectual processes (Cohn, 2000). Common values lead to common fears. “Risk taking and risk aversion, shared confidence and shared fears, are part of the dialogue on how best to organise social relations” in these new times (Douglas & Wildavsky, 1982, cited in Caplan, 2000, p. 184). From this perspective, risk-talk is conceptualised as a political activity; it attributes blame by asserting moral positions and legitimates formal and informal disciplinary regimes (Vera-Sanso, 2000). Moreover, “dominant definitions of risk set moral codes which frame disciplinary regimes, constrain action and set the terms of debate in which people engage both to enforce and resist the impact of such definitions” (Vera-Sanso, 2000, p. 128).

Risk talk, then, does not sit alongside the organisation and conduct of academic work, but actively constitutes that work, including the work of HDR training and the knowledge necessary to undertake this pedagogic work. However, knowledge of risk may produce new risks for the organisation and its personnel. Indeed, a ‘risk issue cycle’ may lead to the establishment of regulations and monitoring that are relatively indifferent to the concerns that initiated the cycle. For example, it is unclear that the focus on the risk of attrition and tardy completions within research degree programs will address the intention to make the best use of available resources to ensure that the research and research training undertaken within Australian universities continues to be world class and that the new knowledge it generates is effectively linked to innovation in Australian industry (Kemp, 1999a, 1999b).
risk and HDR training is considered important as the global knowledge economy has also been described as a ‘risk society’. Ulrich Beck (cited in Burja, 2000, p. 65) defines risk as "a systematic way of dealing with hazards and insecurities induced and introduced by modernisation itself."

Anthony Giddens (1990) adds that the universatisation of risk and danger impacts most forcefully on social relations of intimacy, trust and security.

While there has been little research attention on how institutions produce knowledge about risk in terms of HDR training, there have been some attempts to classify or categorise knowledge and information resources within business institutions. Businesses have moved quickly to manage the intangible resources of intellectual capital as these are considered to be crucial to innovative and competitive advantage (Davies & Meyer, 1988).

Risk-talk and higher degree research training curricula

In order to theorise the types of intellectual capital/resources invested in HDR training two categories of research literature are surveyed: (1) research supervision as explicit teaching, and (2) systems of knowledge classification, management and distribution. Literature from both categories is used to propose strategies for analysing risk-management in terms of HDR work, variously defined as strategies to mitigate against non-completions or slow completions of doctoral studies, and/or low knowledge productivity.

Research supervision as explicit teaching

The debate in the literature on the form of pedagogy appropriate to HDR studies centres on the character and aims of postgraduate research education. Core to this debate is whether the value of doctoral studies lies in their outcome (new knowledge) or in the process (training in research) (Latona, 2001). On the one hand, researchers (Deem & Brehony, 2000; Giblett, 1992; Green & Lee, 1999) propose that postgraduate research supervision is one of the most complex and advanced forms of teaching. From this perspective, supervisors need to be trained/educated in the pedagogical content knowledge of HDR supervision. On the other hand, there are cohorts of researchers who suggest that HDR supervision is a form of ‘mentorship’ or ‘critical conversation’ rather than ‘direct instruction’. These academics place priority on the independent research rather than the pedagogical component of HDR studies. However, as noted above, recent Federal Government policies tend to lean towards the pedagogical
knowledge/models of teaching; (vii) knowledge of learners: cognitive; (viii) knowledge of learners: empirical; (ix) knowledge of self; (x) knowledge of educational contexts; (xi) knowledge of educational ends. She proposes that this classification system enables teachers to develop a better grasp of what they need to know and understand, as well as what they need to be able to do, in order to teach effectively (Turner-Bissett, 1999).

Whatever knowledge classification system is proposed in terms of risk-management, it is clear that the pedagogical work necessary to HDR training is now more complex and more a matter of public debate. With so much to be lost by way of funding and reputation, universities cannot afford any ‘hit and miss’ approach to HDR pedagogic work. Nor can HDR training be contained within the one-on-one pedagogy of the supervisor-student conversation. In recent years, business organisations have spent considerable energy measuring, monitoring and effectively maximising the tangible and intangible resources/capital of knowledge and information. These efforts have been necessary to keep businesses innovative and competitive in the context of a global knowledge economy (Singh, Parker, Dooley & Murphy, 1999). It is somewhat surprising then, that universities as organisations whose core business entails producing and disseminating knowledge have only recently begun to maximise their resources via new risk-management strategies in terms of HDR training. Systems of classifying/categorising knowledge at the micro level of pedagogic work, and the macro level of organisational knowledge management procedures offer one means of moving in this direction.

Conclusion

Our intention in this chapter has been to highlight the mechanisms that are changing the shape of HDR training as knowledge work. We have delineated three main factors directing the construction of HDR training curricula in Australian universities. The factors we consider to be most crucial are: the global knowledge economy, state performance-based funding imperatives, and risk-management strategies deployed by institutions to manage knowledge productivity in terms of HDR progression rates, completions, and links to industry. In this context, HDR training needs to be conceptualised as pedagogic work. Moreover, HDR pedagogic work needs to focus on risk-management strategies, particularly in terms of harnessing knowledge at the micro level of the organisation, including the deployment of strategic networks within and between organisations. In addition, knowledge management must take place at the micro level of the pedagogical relation between supervisor(s) and student(s). A new pedagogical relation demands understanding the knowledge bases of expert supervisors/teachers, as well as the types of knowledge and skills required by HDR students in the new knowledge economy.

Endnotes:

1 The New Knowledge, New Opportunities discussion paper on higher education research and research training (Kemp, 1999a, p. 1) suggests that “Australia is making a major transition from an economy based on the wealth of its physical resources and commodities to an economy which draws its competitive advantage from the skills and creativity of its people. The success of such a transition will profoundly influence the quality of life for all Australians: the availability of jobs for our young people, the quality of working life for those in employment, and the living standards of Australian families. Critical to success will be our national ability to innovate – to generate knowledge, ideas and technologies through high-quality basic research and the commercial development of its findings, and to link effectively with knowledge generated elsewhere in the world.”

2 The most dramatic increase for PhDs “has occurred for the Arts, Humanities and Social Sciences” (DETYA, 2000, p. 139).

3 Between 1989 and 1998, the number of HDR students (excluding overseas students) increased by over 140 per cent to over 35, 500 students (DETYA, 1999, p. 124).

4 Now renamed as Department of Education, Science and Technology (DEST).

5 The Group of Eight refers to the oldest universities in Australia. http://www.g8.edu.au/about.html

6 Carr (2002, p. 30) argues that under the RTS “there have been reductions of more than 40 per cent in the research training effort” of technological universities.

7 Intellectual capital refers to the transfer of knowledge and information from expert to novice through a long process of pedagogic socialisation. Social capital refers to access to social networks and connections. Material capital refers to the virtual and non-virtual learning environments constituted for the conduct of research and research training such as laboratories, libraries, offices, websites (Bournel & Wacquant, 1992; Coleman, 1997).

8 Leadbeater (1999, p. 2) suggested that there are “three forces driving change in the economies of modern societies: finance capitalism, knowledge capitalism (generate new ideas and turn them speedily into commercial products and services – modern economies are a system for distributing intelligence), and social capitalism (an ethic of trust and collaboration is important in the new economy as individualism and self-interest)”.

9 Constâine et al. (2001, p. 1) suggest that “the new global knowledge economy combines two elements: the growing knowledge-intensity of production; and the globalisation of economics, communications and culture.”

10 The term field is used to refer to a social space of conflict and competition, an arena “in which participants vie to establish monopoly over the species of capital effective in it and the power to decree the hierarchy and ‘conversion rates’ between all forms of authority in the field of power” (Bournel & Wacquant, 1992, p. 17). In the course of struggles, the very shape and social divisions of the field becomes a central stake, because alterations to the relative worth and distribution of resources equate to modifications of the structure of the field (i.e., the social division of labour and the social relations within the field).

References:


