



Developing the Scholarship of Teaching in Higher Education: a discipline-based approach

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ABSTRACT *There is an international debate about the development of the scholarship of teaching. It is argued here that the scholarship of teaching needs to be developed within the context of the culture of the disciplines in which it is applied. The scholarship of teaching involves engagement with research into teaching and learning, critical reflection of practice, and communication and dissemination about the practice of one's subject. This provides a challenging agenda for the development of subject-based teaching. Implementing this agenda includes applying the principles of good practice in the disciplines; developing the status of teaching; developing the complementary nature of teaching and research; and undertaking discipline-based pedagogic research. The paper is illustrated with particular reference to the discipline of geography.*

Despite an increasing number of articles and books on teaching-scholarship published in recent years ... the notion of teaching-scholarship remains an elusive yet intriguing concept. (Kreber, 1999, p. 323)

Introduction

During the 1990s there has been an international debate about the development of the scholarship of teaching. The most influential proponents of the need to move away from an emphasis on disciplinary research, as the single form of scholarship recognised in academe, are the late Ernest Boyer and his colleagues at the Carnegie Foundation for the Advancement of Teaching (Boyer, 1990; Glassick, Huber, & Maerof, 1997; Hutchings & Schulman, 1999; Schulman, 1993, 1999). They argue that there is a need to give scholarship a broader meaning so as to define the work of university teachers in ways that enrich, rather than restrict, the quality of undergraduate education. They identify four separate but overlapping areas of scholarship: the scholarship of discovery research; the scholarship of integration, including the writing of textbooks; the scholarship of service, including the practical application of knowledge; and the scholarship of teaching.

The need to recognise and find an appropriate balance between these different forms of scholarship has led the majority of campuses in the United States to revise, or to begin the process of revising, their standards for tenure and promotion (Boyer, 1997). Moreover, this definition of the meaning of scholarship has led, under the auspices of the American Association for Higher Education, to an extensive reinterpretation, by the discipline-based scholarly associations, of the roles and rewards for academics (Diamond & Adam, 1993, 1995a). This work has stimulated calls for changes to the way in which good teaching is recognised and rewarded in many other countries, including Australia (Ramsden & Martin, 1996) and the United Kingdom (Brown, 1995; Gibbs, 1995a). Boyer's framework has also been used as a way of understanding diversity in Australian higher education (Kemmis, Marginson, Porter, & Rizvi, 1999). Strengthening scholarship, according to this view, means intensifying the relationships between universities and the kinds of client groups associated with each type of scholarship.

Subject specialists are actively involved in the development of all four forms of scholarship, although the emphasis varies between disciplines and individuals within disciplines. This paper focuses particularly on the last of Boyer's forms of scholarship, that of teaching. It is argued, though, that progressing the quality of learning and teaching involves engagement with all four areas of scholarship. The main themes of the article are, first, that if the scholarship of teaching is to match that of research there needs to be a comparability of rigour, standards and esteem; and, secondly, that the key to developing a scholarly approach is to link the process explicitly to the disciplines. It is argued that the nature of good teaching needs to be better understood, more open to scrutiny, and better communicated (Boyer, 1990; Ramsden & Martin, 1996). For this to happen, it is suggested that teachers in higher education institutions need to learn how to adopt a scholarly approach to teaching and how to collect and present rigorous evidence of their effectiveness as teachers. This involves reflection, inquiry, evaluating, documenting and communicating about teaching.

The remainder of this paper starts with an analysis of what is meant by the scholarship of teaching. The major section of the paper is concerned with a discussion of what needs to be done to develop the scholarship of teaching in higher education through the disciplines. The argument draws largely on generic educational literature and briefly reviews how far the ideas have been applied in one discipline, geography. Most of the literature referred to originates from Australasia, the United Kingdom and the United States. The paper focuses particularly on undergraduate teaching, because it is here that the issues discussed are clearest.

The Scholarship of Teaching

Teaching and learning in higher education are inextricably linked, so the scholarship of teaching is as much about learning as it is about teaching (Schulman, 1999). Although the processes of teaching and learning are quite complicated, the aim of teaching, according to Ramsden (1992, p. 5), is simple: "it is to make student learning possible". While the aim of scholarly teaching is: "to make transparent how

we have made learning possible” (Martin, Prosser, Conrad, Trigwell, & Benjamin, 1998). “Teaching” is used here, in its broadest sense, to include “the aims of the curriculum, the methods of transmitting the knowledge those aims embody, the assessment of students, and the evaluation of the effectiveness of the instruction with which they are provided” (Ramsden, 1992, p. 9). Recent research shows that: “just as students experience learning in different ways, university teachers experience teaching in different ways. Their perceptions of their teaching context, the way they approach their teaching, and the outcomes of those approaches vary between individuals in the same context, as well as between contexts” (Prosser & Trigwell, 1999, p. 7). Improvements in learning and teaching depend upon the development of the scholarship of teaching (Menges, Weimer, & Associates, 1996).

Despite calling for greater attention to be given to the scholarship of teaching, Boyer (1990) does not attempt to give an operational definition. His conception is limited to teachers who are “well informed” and who “stimulate active, not passive learning and encourage students to be critical, creative thinkers, with the capacity to go on learning”. Further, he suggests that “good teaching means that faculty, as scholars, are also learners” (Boyer, 1990, pp. 23–24). Though these are laudable objectives in themselves, it has been left to other writers, such as Schulman (1993) and Schon (1983, 1995), to explore and to extend the meaning of the term *scholarship of teaching* (Trigwell, Martin, Benjamin, & Prosser, 1999).

Drawing on this work and that of others, Martin, Benjamin, Prosser and Trigwell (1999) identify a consensus that the scholarship of teaching involves three essential and integrated elements: engagement with the scholarly contributions of others on teaching and learning; reflection on one’s own teaching practice and the learning of students within the context of a particular discipline; and communication and dissemination of aspects of practice and theoretical ideas about teaching and learning in general, and teaching and learning within the discipline. It is significant that two of these elements refer explicitly to developing scholarship within the context of one’s discipline.

This list supports the view of Cross and Steadman (1996, p. 28) that there are “multiple scholarships of teaching”. The scholarship of teaching can involve all four forms identified by Boyer: discovery research into the nature of learning and teaching; integration of material from several disciplines to understand what is going on in the classroom; application of what is known about how students learn to the learning–teaching process; and teaching, “not only transmitting knowledge, but transforming and extending it as well” (Boyer, 1990, p. 24). The advantage of thinking of the different kinds of academic work all as forms of scholarship is that it emphasises their common features, rather than their differences.

One of the key issues in implementing this broader view of the meaning of scholarship is how to evaluate the different forms of scholarship and to ensure standards are protected. Glassick et al. (1997, p. 10) argue that “whatever the scholarly emphasis, the approach deserves dignity and respect, insofar as it is performed with distinction. Excellence must be the only yardstick.” Interestingly, support for a concept of scholarship based on quality also comes from a phenomenographical study of what is valued by academics in higher education (Brew, 1999).

Glassick et al. (1997) identify six criteria that can be applied to scholarship in all its different forms: clear goals; adequate preparation; appropriate methods; significant results; effective presentation; and reflective critique. They suggest that, taken together, the criteria provide “a powerful conceptual framework to guide evaluation” (p. 25). Applying to teaching those evaluation criteria and quality enhancement processes associated with research is a theme which runs through several of the ideas for developing the scholarship of teaching through the disciplines (Healey, 2000).

Whereas the criteria developed by Glassick et al. (1997) apply to all forms of scholarship, Kreber (1999) has produced a list of indicators that may be used specifically for the formative and summative evaluation of what she calls *teaching-scholarship*. These indicators emphasise processes as well as outputs by looking at what scholars do as well as what they produce (Kreber, 2000). She identifies three different knowledge domains:

- *instructional knowledge*, which refers to the knowledge that teachers need to acquire in the area of instructional design;
- *pedagogical knowledge*, which refers to what we know about how students learn; and
- *curricular knowledge*, which refers to the goals, purposes and rationale of a course or program.

In becoming successful teachers, staff gain knowledge within each of these domains through a process of *content*, *process* and *premise* reflection about their own teaching efforts. Performance indicators can be constructed for each of these nine types of reflection (Kreber, 1999). For example, for the instructional knowledge domain, an indicator for content reflection might be keeping a journal or log of methods and materials used; for process reflection, a possible indicator might be collecting data on students’ perceptions of methods and materials; while for premise reflection, writing critiques of methods articles or books might be a suitable indicator.

Developing the scholarship of teaching is more than striving to be an excellent teacher or being scholarly (Hutchings & Schulman, 1999). Whereas striving for excellence involves a high level of proficiency in stimulating students and fostering their learning in a variety of appropriate ways, a scholarly approach to teaching entails being familiar with the latest ideas in one’s subject and also being informed by current ideas for teaching that subject. A scholarly approach also involves evaluating and reflecting on one’s teaching practice and the student learning which follows. The scholarship of teaching shares these characteristics of excellent and scholarly teaching, but, in addition, involves communicating and disseminating about the teaching and learning practices of one’s subject. It also entails investigating questions related to how students learn within a discipline.

Developing the Scholarship of Teaching in Higher Education Through the Disciplines

The traditional model of educational development is an institutional-based one (Gosling, 1996; Knapper, 1997). However, it is argued here that for most aca-

demics, developing the scholarship of teaching will only bring about change in their priorities if it is embedded in disciplines and departments (Gibbs, 1996; Healey, 1998a; Jenkins & Healey, 2000).

This is because, firstly, for most academic staff their primary allegiance is to their subject or profession, and their sense of themselves as staff at a given institution is secondary (Becher, 1994; Diamond & Adam, 1995b; Gibbs, 1996; Jenkins, 1996). Secondly, there is a strong perception among staff that there are significant differences among disciplines in what academics do and how those activities are described and valued. There is much supporting evidence for these perceptions. Biglan (1973), for example, established that the structure and output of university departments are related to the characteristics of academic subject matter; while Kolb (1994) found that disciplines form clusters based on the learning styles predominant among their students. Furthermore, Moses (1990) has demonstrated that attitudes to teaching and research tasks, as well as patterns of communication, differ in different disciplines; while Donald (1997) has shown that learning goals vary between disciplines. These findings point to the need to consider how the characteristics of disciplines “define limits on the extent to which studies in one area can be generalized to areas whose subject matter is different” (Biglan, 1973, p. 213).

It is important, therefore, that the scholarship of teaching in higher education is not divorced from the content of the discipline being taught. As Rice (1995, p. vi) notes: “improvement of teaching needs to be rooted in the intellectual substance of the field”. This principle has guided the development of the Carnegie Academy for the Scholarship of Teaching and Learning. For example, its Pew National Fellowships Program selects Carnegie Scholars in disciplinary groups to provide collegial interactions within the discipline (Cambridge, 1999).

Developing the scholarship of teaching in higher education can also make an important contribution to the way in which a discipline progresses. High-quality teaching can, for example, improve the quality of learning of students studying the discipline; provide a map to the literature on a particular topic and the directions in which it is progressing; attract and stimulate students to study the subject; transmit the values and traditions of the discipline; develop and promote good discipline-based pedagogic practice; encourage reflection on teaching styles and strategies; and enhance the reputation of the discipline. However, debates about progress in the disciplines have focused on the content and methodology of the subject and have largely ignored the role of teaching (Healey, 1999). For example, within geography, see the discussion by Lowe and Short (1990) and Bassett (1999).

Using a definition of the scholarship of teaching based on engagement with research into teaching and learning, critical reflection of practice, and communication and dissemination about the practice of one’s subject, provides a challenging agenda for the development of teaching in higher education. There are several closely related aspects involved in implementing this agenda, five of which will be discussed here: the application of scholarship in teaching; the status of teaching; the complementary nature of teaching and research; the standing of discipline-based pedagogic research; and the role of discipline networks.

Geography is an intriguing discipline with which to illustrate these challenges. On

the one hand, it has more than 20 years' experience of developing a discipline-based approach to educational development (Healey, 1998a) and is recognised as one of the leading disciplines in pedagogic innovation (Gibbs, 1999a). On the other hand, because it draws on the social and natural sciences as well as aspects of the humanities, many of the ways in which geographers have approached the issues are adaptable to other disciplines (Healey, Jenkins, & Kneale, 2000). Given the plurality of the intellectual traditions on which geography draws (QAA, 2000), it is perhaps not surprising that it does not appear to fit easily into some of the discipline classifications identified by Biglan (1973) and Kolb (1994) (Healey & Jenkins, 2000).

Developing the scholarship of teaching in geography is an international issue, but the way the argument is played out varies between countries. For example, in the United States, as already noted, the issue of roles and rewards has been important (Abler et al., 1994), while in the United Kingdom, the discussion of the relationship of research and teaching and the impact of the Research Assessment Exercise (RAE) has dominated the debate (Healey, 1997, 1998c; Jenkins, 1995, 2000).

Developing the Application of Scholarship in Teaching

Applying the ideas of scholarship to the practice of individual teachers leads to the suggestion that the extent to which staff are scholarly in this element of their academic life should be reflected in how they teach. There is, however, a lack of research evidence on the relationship between pedagogic scholarship and better teaching. It is quite possible that some people may be "scholarly introverts" who learn more and more about teaching, but never get any better at doing it (Wareing, 1999). Similarly, some people are intuitive teachers who are excellent at the practice, even though they may never have studied the theory. Nevertheless, it seems a reasonable proposition that a good test that someone is adopting a scholarly approach to their teaching is that they attempt to apply the principles of good teaching practice, such as are outlined in Chickering and Gamson (1991) and Ramsden (1992).

Within any discipline, teachers will be at different stages in the extent to which they adopt a scholarly approach to teaching. At one end of the spectrum are teachers who show no awareness of the literature and ideas on teaching and learning in their discipline in the way they teach, do not reflect on their teaching practice or their students' learning, and do not discuss their teaching with colleagues. At the other end of the continuum are teachers who are fully practising the scholarship of teaching. They seek to understand teaching better "by consulting the literature on teaching and learning, by investigating their own teaching, by reflecting on their own teaching intentions and their students' learning, and by formally communicating their ideas and practice to their peers" (Martin et al., 1999). Most geography teachers in higher education fall somewhere between these two extremes. During their careers, staff seem to develop as teachers in stages, though not all reach the later stages (Krugel, 1993). Wareing (1999) argues that this progression appears not to be even, nor is it always in one direction. People may plateau in their teaching

skills and then leap forward when they move to apply something radically different from what they were doing before. She also suggests that it is “possible for teaching skills to go backwards temporarily while scholarship goes forwards: people ... [may] get self-conscious and confused as their knowledge increases, and take a while to digest new learning and put it usefully into practice”.

A scholarly approach to teaching has been advocated, in geography, by Jenkins (1998, pp. 95–96). In writing about designing the curriculum in geography departments in higher education, he argues that “teaching and curriculum design is an act of scholarship, and that as academics when we teach we demonstrate the value of universities to society and immediately our students by the extent to which we are aware of and use the conversations on the scholarship of the curriculum. If we treat curriculum design as something that can be done by common sense, knowledge and experience, why should we expect others to value the knowledge we have developed on the *substantive* areas we teach?”

To be scholarly, academics need to use the same kind of thought processes in their teaching that they apply to their research (Elton, 1992). A good example of this concerns lecturing. There is a wealth of literature which shows the limitations for student learning of lecturing continuously for 55 minutes or more (see Bligh, 1998, for a review of some of the evidence). Yet, many staff continue to teach in this way, and lectures of this kind remain the most common learning experience for many students in higher education. It appears that many staff are either not aware of the research evidence or choose to ignore it, perhaps because there is a culture in some departments in which the improvement of teaching and learning is rarely discussed. A scholarly approach to teaching would involve becoming familiar with this literature and acting on its findings. This does not necessarily mean reading the original research studies, although most lecturers encourage the students studying their options to do this, but it should at least mean reflecting on the theory and practice of lecturing applied to one’s discipline. Agnew and Elton (1998) provide a readable and practical account of how students’ learning in geography lectures may be enhanced by integrating activities into the sessions. Even when running department workshops on a form of teaching common in virtually all disciplines, having discipline-based examples makes it more relevant to the participants and more likely that the ideas will be adopted.

A slightly different example concerns assessment methods. The research evidence clearly shows that the assessment system has a marked effect on whether students adopt a “deep” or “surface” approach to learning (Ramsden, 1992; Prosser & Trigwell, 1999). Yet in many institutions, the accrediting function which assessment has to serve, dominates, and its formative function, with the potential to improve student learning, is secondary (Biggs, 1992). Gibbs (1999b, pp. 153–154), addressing an audience of geographers, argues that there is a need to emphasise the functions of assessment which support learning—capturing student attention and effort; generating appropriate learning activities; providing feedback to the student; and developing the ability to monitor their own learning and standards within students. Some of these methods, including self- and peer assessment, may involve little effort on behalf of the member of staff, apart from setting up and monitoring

the system. Some examples of the application of these methods in geography may be found in Bradford and O'Connell (1998).

Developing the Status of Teaching

The idea of scholarship in teaching is an attractive one to those who are keen to see improvement in the status of teaching in higher education institutions (HEIs). The argument made is that teaching, too, can be the most scholarly of pursuits. However, if teaching is to be valued equally with research then, like research, teaching must open itself to the scrutiny of theoretical perspectives, methods, evidence and results (Martin et al., 1999). Gibbs (1995a, 1999b) has taken this view further. He argues that for every process that supports quality in research, there is a parallel process that can be used to support quality in teaching. The theme behind this is that if teaching is to be taken as seriously as research, and to receive similar rewards, there is a need for it to be more public and open to evaluation by peers.

The most significant of the processes for enhancing quality, according to Gibbs (1995a), is the reward for teaching excellence, for both individuals and departments. Staff share this view. An international survey by Wright (1995) found that out of 36 measures listed, recognition of teaching in tenure and promotion decisions is seen by academics, in every country surveyed, as having the most potential for improving the quality of teaching. Yet there is clear evidence that "the gap between perceptions of what university reward processes actually do, and what academic staff would like them to do, is much larger for teaching than it is for research; and that this is particularly true for undergraduate teaching" (Ramsden & Martin, 1996, p. 304). The same study concluded that there is "no substitute for action to promote good teachers if universities want their staff to accept that good teaching is properly recognized" (p. 312).

The need to give more emphasis to valuing teaching more highly in allocating staff rewards in geography is also emphasised by the Association of American Geographers (AAG). Their statement recommends that:

competent teaching—verified by vigorous peer review—be a *necessary condition* of retention and advancement in all professional positions in geography in all academic institutions. Teaching should be valued more highly in allocating faculty rewards than it has been for the last several decades, especially in relation to discovery (research). (Abler et al., 1994, pp. 14–15)

The main constraint on implementing these ideas is the perception that it is more difficult to identify excellence in teaching compared to excellence in research. However, there are several examples of good practice in this area and guidance is available on the selection of appropriate criteria (Elton, 1998; Gibbs, 1995b; Ramsden & Martin, 1996). Among the points stressed are: the desirability of following procedures which reflect familiar research performance evaluation methods, such as peer review and the use of teaching portfolios (Ramsden & Martin, 1996); the need to distinguish criteria for competence and for excellence (Elton,

1998); that being good at teaching on its own is not enough, except for staff early in their career (Elton, 1998; Gibbs, 1995b); the importance of training for lecturers, reviewers and promotion committees in the evaluation processes (Gibbs, 1995a); and the need to promote excellent teaching, not just excellent teachers (i.e., there is a need to have a mechanism which stimulates the majority of staff who are not rewarded in any one year and does not demotivate those staff who apply, but are not rewarded) (Gibbs, 1995c).

The development and application of promotion criteria are primarily the responsibility of institutions, although discipline-based associations have an important role in encouraging their development and advising on the appropriateness of the criteria to their disciplines. Such scholarly associations also have a vital part to play in raising the status of teaching in higher education, through the support that they give to educational initiatives and the priority they give to teaching and learning matters. The role of the Royal Geographical Society with the Institute of British Geographers (RGS-IBG) in coordinating the responses of the discipline in the United Kingdom to the proposal of the Higher Education Funding Councils (HEFCs) to establish national subject centres and to the initiative of the Quality Assurance Agency for Higher Education (QAA) to develop benchmarking standards in geography, is a good example (QAA, 2000). The AAG's Commission on College Geography II provides another illustration of the positive support that an Association can give to promoting good teaching. They prepared 10 active learning modules on *The Human Dimensions of Global Change* (Hands-On!, 1998). Several professional associations, including the AAG, the Institute of Australian Geographers and the RGS-IBG have instituted teaching awards and some are developing regular lecture slots in their Annual Conferences concerned with geographical education issues.

Institution-based generic teaching and learning programs for new teachers in higher education are common in many countries. These need to be supplemented by discipline-based courses (Jenkins & Healey, 2000). A pilot residential workshop for new and recently appointed teachers in geography, earth and environmental sciences in HEIs in the UK is being developed by a consortium, and may provide a model for adding discipline-based issues and perspectives to institutional-based generic learning and teaching courses (Healey, Jenkins, Clark, & Cottingham, 1999).

Geography has been more active in the field of continuing professional development, with workshops and conferences regularly being organised by educational speciality groups, such as the Commission on Geographical Education of the International Geographical Union, the Geography Education Speciality Group of the AAG, and the Higher Education Study Group of the RGS-IBG. Recently, several government-funded projects have also been active in providing continuing professional development in geography (see later section on discipline networks).

Developing the Complementary Nature of Teaching and Research

Departments are faced with increasing pressures to perform well in research and to generate increased income from research and consultancy, while at the same time

providing high-quality teaching. If the development of the scholarship of teaching is to make progress, it is important to develop the complementary nature of these different activities. If the mutual benefits of teaching and research are to be maximised, this is a process that may need to be managed.

The relationship between undergraduate teaching quality and research quality (usually taken as approximately synonymous with Boyer's discovery scholarship) has attracted much attention in recent years and has led to many claims on both sides of the argument, some of which unfortunately seem to be based on little more than anecdotal evidence (Gibbs, 1995a; Johnston, 1996a). Some of this debate has been specifically about geography (Healey, 1997, 1999; Jenkins, 2000). On the one hand, it is asserted that the best teaching and learning in geography is led by the best researchers (Cooke, 1998) and that there is a strong correlation between where the best geography research is done and where the best teaching is available (Johnston, 1996b). On the other hand, it has been argued that, in the United Kingdom, the competition induced by the RAE has had deleterious effects on the quality of undergraduate teaching in geography (Jenkins, 1995).

There has been a large number of studies which have examined the relationship between the quality of undergraduate teaching and research in higher education. Most have been undertaken at the level of the individual academic and have found that there is little or no correlation between research productivity and teaching quality (see, for example, the reviews by Brown, 1995; Feldman, 1987; Hattie & Marsh, 1996; Jenkins, 2000; Ramsden & Moses, 1992). Yet, as Webster (1985) argues, the myth that there is a relationship persists because we want there to be a link.

Politically, the stakes are loaded against evidence showing there is not a link between teaching and research. Neither staff, who wish to be allowed to continue to engage in both teaching and research, nor institutional managers, who want to maintain university funding based upon research and teaching, have any desire to see the link severed or weakened. (Brew & Boud, 1995a, p. 37)

Others have argued that the lack of a positive relationship in these correlation studies reflects the way the variables are measured. Elton (1986), for example, has challenged the validity of the design of these investigations. He argues that they are based on the assumption that "the research and teaching capabilities of an academic can be rated quantitatively, each on a single dimension, which seems intrinsically improbable for such complicated human activities" (p. 300). He goes on to argue that for a correlation to exist it is necessary for it to be mediated through scholarship. Scholarship, according to Elton (1992), in both subject disciplines and in teaching, involves new and critical reinterpretations of what is already known. His concern is with the application of scholarship and the consequent reflective practice to both disciplines and pedagogy.

A slightly different interpretation is taken by Brew and Boud (1995a, 1995b). They argue that an attempt to find a relationship between teaching and research is confounded by different conceptions of the two enterprises. They suggest that if

there is a link between the two, it operates through the element which they have in common, the act of *learning*. Research, they argue, is a process of learning or discovery, while teaching is concerned with facilitating learning. The processes which students go through in learning are, they argue, similar to the processes of research. This may help to explain the common assumption that researchers make the best teachers because “as researchers, teachers are often engaged in the same activity as their students, namely learning” (Brew & Boud, 1995b, p. 270). Moreover, as research involves a deep approach to learning, researchers model, in their own work, learning approaches that are desirable for their students to follow. A related perspective is provided by Willis, Harper and Sawicka (1999, p. 3), who suggest that “learning can be enhanced through the effective integration of teaching and research in a way that reflects situational and disciplinary characteristics”.

In a recent article, Elton (in press) has argued that both scholarship and learning are critical variables in the teaching–research nexus. He postulates that an *input* of scholarship, in the sense of a deep understanding of what is already known in the subject taught or researched, is necessary if a correlation is to exist between “good” research and “good” teaching. This relationship can then be verified through the *process* of learning (verb) and examination of the learning (noun) *output* which takes place. Elton goes on to argue that a positive nexus is best achieved through focusing on learning as a process. In particular, he argues that “student-centred teaching and learning processes are intrinsically favourable towards a positive nexus, while more traditional teaching methods may at best lead to a positive nexus for the most able students, who in the perception of traditional academics are of course the future university teachers” (Elton, in press).

The problem, however, with much of the debate is that it has tended to polarise the issue into a “teaching versus research” rivalry. Indeed, some scholars believe that to achieve teaching and research goals they need to be treated as separate activities (Barnett, 1992). In this view, teaching and research are seen as activities competing for academic’s most valuable resource—time. Other studies which report on interviews with academics reveal that staff find their own teaching and research activities “merging in a seamless blend” (Clark, 1987, p. 30). Colbeck (1998) cites studies that found that as much as 45% of staff’s work-time was taken up achieving multiple goals.

There is also evidence that students may gain many potential benefits from fostering a link between teaching and research. A recent study found that students at one institution perceived clear benefits from staff research, including staff enthusiasm and the credibility of staff and their institution (Jenkins, Blackman, Lindsay, & Paton-Saltzberg, 1998). However, they also perceived disadvantages from staff involvement in research, particularly in relation to staff availability to students. Moreover, students did not perceive themselves as “stakeholders” in staff research, in the sense that “they had little appreciation of why it was taking place, which members of staff were doing what, what the expected/required benefits were that students should experience and, often, no sense that they had any ownership/involvement in these activities” (Jenkins et al., 1998, p. 135). Interestingly, they also found that the higher the RAE rating of the department, the greater the number of

positive statements about staff research were made, but at the same time, the higher the number of negative statements occurred.

Developing the complementary nature of teaching and research is a key strategic issue for most departments and HEIs. For example, Hattie and Marsh argue fervently that:

universities need to set as a mission goal the improvement of the nexus between research and teaching. The goal should not be publish or perish, or teach or impeach, but to publish and teach effectively. The aim is to increase the circumstances in which teaching and research have occasion to meet, and to provide rewards not only for better teaching or for better research but for demonstrations of the integration between teaching and research. (1996, p. 533)

Hence, if the complementarities between teaching and research are to be maximised and the adverse impacts resolved, they need to be planned for and not left to happen by accident. As Jenkins (2000) argues, “for that ‘coupling’ to occur requires careful action by individuals, departments, the disciplinary communities and national funding and review bodies”. For example, in New Zealand, the Academic Audit Unit specifically investigates whether universities have policies to encourage a research/teaching link (Woodhouse, 1998). Jenkins (1998) also provides a discussion and illustration of some of the ways for linking research and teaching through the design and delivery of the geography curriculum. He suggests developing students’ awareness of and ability to do geographic research, protecting staff time to do research, and limiting the disadvantages of staff involvement in research.

It is arguable that the ease with which teaching and research may be linked varies between disciplines. For example, integrating the latest research findings into undergraduate teaching may be relatively more difficult in the sciences in comparison with the humanities and social sciences, because the gap between the research frontier and the ideas and materials taught in undergraduate courses is more difficult to bridge in the sciences. This view is supported by Colbeck’s (1998) study. She found that integration of classroom-oriented teaching and research appeared to be achieved more easily where there were low levels of paradigm consensus, in what Biglan (1973) refers to as the “soft” disciplines. This suggests that within geography it may be relatively easier to link teaching and research in human geography than in physical geography.

A further key way in which the link between research and teaching can be forged is by encouraging discipline specialists to undertake research into their teaching and the ways in which their students learn.

Developing the Standing of Discipline-Based Pedagogic Research

Research into learning and teaching in higher education is a key element of the scholarship of teaching, but relatively few discipline-specialists publish research into the nature of learning and teaching in their subjects. Boyer (1990) saw research as the cornerstone of the scholarship of teaching. Others have taken up this theme. For

example, Prosser and Trigwell (1999, p. 8) argue that “the improvement of learning and teaching is dependent upon the development of scholarship and research in teaching”. While Ramsden (1992, p. 5) suggests that “higher education will benefit if those who teach enquire into the effects of their activities on their students’ learning.” Asmar (1999) has also applied this argument to faculty developers and says that they ought to be engaged in research, or at the very least keep up to date with the research of others. Developing the scholarship of teaching through the disciplines should encourage more discipline-based pedagogic research to be undertaken.

Research into learning ranges in a continuum from an informal evaluation of a session or a whole module at one end, to a major educational research project at the other end. In between is “action” or “classroom” research. Undoubtedly, some research into teaching and learning in the disciplines meets the definition used in the UK’s RAE of “an original investigation undertaken in order to gain knowledge and understanding” (HEFCs, 1998, Annex C). However, many studies are more concerned with practical questions that arise in the classroom and with improving student learning, than with generating research publications, though these may also be an outcome of such “action” research projects (Angelo & Cross, 1993; Cross & Steadman, 1996; McKernan, 1996). The acceptance for the RAE2001 that discipline-based pedagogic research in higher education “will be assessed by all subject panels on an equitable basis with other forms of research” (HEFCs, 1999, para. 1.10) should help raise its status.

The broad nature of geography means that geographers are used to borrowing and adapting ideas from outside their own discipline. Arguably, geographers are also more open than many other disciplines to innovations in learning, teaching and assessment (Healey, Jenkins, & Kneale, 2000). There is evidence that in the United Kingdom and the United States, geography is one of the leading disciplines in pedagogic innovation. For example, in the United Kingdom, geography is the only discipline which has received funding from HEFCE’s Teaching and Learning Technology Program, the Fund for the Development of Teaching and Learning and the Improving Provision for Disabled Students’ Fund; and the Department for Education and Employment’s Discipline Networks and Key Skills programs. Geography also has its own international journal—the *Journal of Geography in Higher Education*—dedicated to promoting learning and teaching of the subject (Healey, 1998a).

Currently there are, as Jenkins (1997, p. 13) points out, “lower standards of evidence and scholarship demonstrated in discussions about the teaching of geography than those of the discipline per se.” This lack of professionalism, he argues, “reflects the lower status teaching and research on discipline-based pedagogy occupies vis-à-vis research on the discipline per se.” It is important, if the status of pedagogic research is to be raised, that the same standards are applied to pedagogic journals as for other discipline journals (Weimer, 1993, 1997). Although this criticism applies less to geography than many other disciplines, there is a tension for editors of discipline pedagogic journals in trying to raise the level of scholarship of

the articles published, while not discouraging discipline-specialists from writing (and reading) their journals (Healey, 1998a).

Developing the Role of Discipline Networks

The final topic to be considered in this paper is the role of discipline networks in developing the scholarship of teaching in higher education. Whereas the previous topics have been concerned with direct ways of enhancing the scholarship of teaching, the development of discipline networks is an important mechanism for promoting and facilitating the other aspects. Geographers have accumulated a lot of experience in developing educational networks, at least in relation to most other disciplines. These include the Virtual Geography Department in the United States (<http://www.utexas.edu/depts/grg/virtdept/contents.html>) and the Geography Discipline Network in the UK (<http://www.chelt.ac.uk/gdn>). However, most of what has occurred has been project based (Healey, 1998a, 1998b). The Computers in Teaching Initiative in the United Kingdom, with a centre at the University of Leicester devoted to Geography, Geology and Meteorology, was an exception (Robinson, Castleford, & Healey, 1998). The HEFCs' initiative to establish 24 subject centres in the United Kingdom, one of which is for Geography, Earth and Environmental Sciences, holds out the potential for the development of permanent teaching communities owned by the disciplines (<http://www.ilt.ac.uk/itsn/index.htm>).

Whereas the strength of subject networks is that they build on the propensity for staff to value their discipline contacts, their main weakness is the tendency for insularity. Not only can insularity mean that the network does not benefit from exposure to new ideas, but it can also lead to the needless recreating of wheels. One of the strengths of geographers is that they are good at collaborating. However, a significant problem for many discipline networks is that they do not see beyond their discipline. This came out in Weimer's (1993) review of discipline-based pedagogic journals. She found that most of the journals exist in a sort of splendid isolation with respect to any writing or research done outside the field. Links to related subject networks are important, not only because many of the ideas discussed are transferable, but also because there is a need to address the issues faced by discipline specialists working in interdisciplinary centres.

One way in which the isolation of subject networks can be reduced is to involve educational developers in their operation, although this is relatively rare (Healey, 1998a). An exception is the Geography Discipline Network Fund for the Development of Teaching and Learning (FDTL) project, in which nine educational developers, one in each of the nine institutions in the consortium, were members of the project team. Two of the four UK advisers were also educational developers. The project gained from their insight, particularly in designing the style, and preparing the content of, the ten guides to good practice in teaching, learning and assessing geography, and the associated workshops (Gravestock & Healey, 1998; Healey & Gravestock, 1998).

International links are also important. Despite educational systems differing from

one nation to another, much of the pedagogy suitable for a discipline in one country is transferable to teaching the same discipline in another country, and, where the practices are not transferable, it is illuminating to explore why this is the case. International networking is seen as an indicator of the health of research networks, but is less frequent among networks in higher education (Healey, 1998b), partly due to funding difficulties (Jenkins & Healey, 2000). A significant step forward has been the establishment of an International Network for Learning and Teaching Geography in Higher Education which was launched at an international symposium in 1999 (Hay, Foot, & Healey, 2000; Healey, Foote, & Hay, 2000).

Conclusion

Following a review of the characteristics of the scholarship of teaching in higher education, this paper has focused on why it is important that the multiple scholarships of teaching are developed through the disciplines. Some of the ways this can be done were illustrated with examples drawn from the discipline of geography.

Despite many calls for valuing and rewarding the scholarship of teaching (e.g., Abler et al., 1994; Boyer, 1990), the concept of a scholarship of teaching is unfamiliar to many university teachers (Baume, 1996). What is needed is for “teachers in higher education to bring to their teaching activities the same critical, doubting and creative attitude which they bring habitually to their research activities” (Elton, 1987, p. 50). Whether it is those who see themselves primarily as teachers, who become the pedagogic researchers in their disciplines, or subject-based researchers diversify into researching into the teaching of their subject, does not really matter. Encouraging both to be involved will help to raise the status of teaching and discipline-based pedagogic research and emphasise that the common features linking teaching and research are learning and scholarship.

Teaching will only be properly valued in higher education, Martin et al. (1998) argue, “when it is publicly seen to be a scholarly pursuit. This means communicating the way we as scholarly teachers:

- take account of the interplay between disciplinary research and the education of undergraduates
- rigorously investigate teaching and learning
- consider university teaching as a process of critical reflection on practice, *open to the same kind of collegial scrutiny as research.*”

Discipline-based education networks have a vital role to play in facilitating this communication and encouraging university teachers to develop a scholarly approach to the way they teach, and the way they research and write about their teaching and their students’ learning. Good teaching, like good research, is multi-dimensional, difficult and contextual. Developing the scholarship of teaching involves many challenges and much work remains to be done to tease out how this might best be done. An excellent starting place would be to encourage colleagues to apply the same kinds of thought processes to their teaching as they do to their research. If

more university teachers followed this dictum, more scholarly teaching should result and, more significantly, the quality of learning of our students should be enhanced.

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References

- ABLER, R., ADAMS, J. S., BOOKER-GROSS, S., CONKLEY, L., FERNALD, E., GRIFFIN, E., MERCER, J. & MOLINE, N. (1994). Reconsidering faculty roles and rewards in geography. *Journal of Geography in Higher Education*, 18(1), 7–18.
- AGNEW, C. & ELTON, L. (1998). *Lecturing in geography. A HEFCE FDTL Project Guide*. Cheltenham: Geography Discipline Network, Cheltenham and Gloucester College of Higher Education.
- ANGELO, T. A. & CROSS, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco: Jossey-Bass.
- ASMAR, C. (1999). Scholarship, experience, or both? A developer’s approach to cross-cultural teaching. *International Journal for Academic Development*, 4(1), 18–27.
- BARNETT, R. (1992). Linking teaching and research: a critical inquiry. *Journal of Higher Education*, 63(6), 619–636.
- BASSETT, K. (1999). Is there progress in human geography? The problem of progress in the light of recent work in the philosophy and sociology of science. *Progress in Human Geography*, 23(1), 27–47.
- BAUME, D. (1996). Editorial. *International Journal for Academic Development*, 1(1), 3–5.
- BECHER, T. (1994). The significance of disciplinary differences. *Studies in Higher Education*, 19(2), 151–161.
- BIGGS, J. B. (1992). Approaches to the enhancement of tertiary teaching. *Higher Education Research & Development*, 8, 7–25.
- BIGLAN, A. (1973). Relationships between subject matter characteristics and the structure and output of university departments. *Journal of Applied Psychology*, 57(3), 204–213.
- BLIGH, D. (1998). *What’s the use of lectures* (5th ed.). Exeter: Intellect.
- BOYER, E. L. (1990). *Scholarship revisited*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- BOYER, E. L. (1997). Prologue: Scholarship—a personal journey. In C. E. Glassick, M. T. Huber,

- & G. I. Maerof (Eds.), *Scholarship assessed: Evaluation of the professoriate* (pp. 1–3). San Francisco: Jossey-Bass.
- BRADFORD, M. & O'CONNELL, C. (1998). *Assessment in geography. A HEFCE FDTL Project Guide*. Cheltenham: Geography Discipline Network, Cheltenham and Gloucester College of Higher Education.
- BREW, A. (1999, July 12–15). *The value of scholarship*. Paper presented to the Annual Conference of the Higher Education Research and Development Society of Australia, Melbourne, Australia. Available at: <http://www.herdsa.org.au/vic/cornerstones/authorframeset.html>
- BREW, A. & BOUD, D. (1995a). Research and learning in higher education. In B. Smith, & S. Brown (Eds.), *Research, teaching and learning in higher education* (pp. 30–39). London: Kogan Page.
- BREW, A. & BOUD, D. (1995b). Teaching and research: Establishing the vital link with learning. *Higher Education*, 29, 261–173.
- BROWN, R. (1995). *Quality, funding and diversity: The role of research in higher education* (Occasional Paper 4). Centre for Policy Studies, University of Leeds.
- CAMBRIDGE, B. (1999). The scholarship of teaching and learning: Questions and answers from the field. *AAHE Bulletin*, 52(4), 7–10.
- CHICKERING, Z. F. & GAMSON, A. W. (Eds.). (1991). *Applying the seven principles for good practice in undergraduate education*. San Francisco: Jossey-Bass.
- CLARK, B. R. (1987). *The academic life: Small worlds, different worlds*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- COLBECK, C. L. (1998). Merging in a seamless blend. *Journal of Higher Education*, 69(6), 647–671.
- COOKE, R. (1998). Enhancing teaching quality (Editorial II). *Journal of Geography in Higher Education*, 22(3), 283–284.
- CROSS, K. P. & STEADMAN, M. H. (1996). *Classroom research: Implementing the scholarship of teaching*. San Francisco: Jossey-Bass.
- DIAMOND, R. M. & ADAM, B. A. (Eds.). (1993). *Recognizing faculty work: Reward systems for the year 2000* (New Directions in Higher Education, 81). San Francisco: Jossey-Bass.
- DIAMOND, R. M. & ADAM, B. A. (Eds.). (1995a). *The disciplines speak: Rewarding the scholarly, professional, and creative work of faculty*. Washington, DC: American Association for Higher Education.
- DIAMOND, R. M. & ADAM, B. A. (Eds.). (1995b). Describing the work of faculty: Disciplinary perspectives. In R. M. Diamond & B. A. Adam (Eds.), *The disciplines speak: Rewarding the scholarly, professional, and creative work of faculty* (pp. 1–14). Washington, DC: American Association for Higher Education.
- DONALD, J. (1997). *Improving the environment for learning: Academic leaders talk about what works*. San Francisco: Jossey-Bass.
- ELTON, L. (1986). Research and teaching: Symbiosis or conflict. *Higher Education*, 15, 299–304.
- ELTON, L. (1987). *Teaching in higher education: Appraisal and training*. London: Kogan Page.
- ELTON, L. (1992). Research, teaching and scholarship in an expanding higher education system. *Higher Education Quarterly*, 46(3), 252–268.
- ELTON, L. (1998). Dimensions of excellence in university teaching. *International Journal for Academic Development*, 3(1), 3–11.
- ELTON, L. (in press). Research and teaching: What are the real relationships? Manuscript submitted for publication. *Teaching in Higher Education*, 6(1).
- FELDMAN, K. A. (1987). Research productivity and scholarly accomplishment of college teachers as related to their instructional effectiveness. *Research in Higher Education*, 26, 227–298.
- GIBBS, G. (1995a). The relationship between quality in research and quality in teaching. *Quality in Higher Education*, 1(2), 147–157.
- GIBBS, G. (1995b). How can promoting excellent teachers promote excellent teaching? *Innovations in Education and Training International*, 32(1), 74–82.

- GIBBS, G. (1995c). Promoting excellent teachers is harder than you'd think. *Change*, 27(3), 16–20.
- GIBBS, G. (1996). Supporting educational development within departments. *International Journal for Academic Development*, 1(1), 27–37.
- GIBBS, G. (1999a). Review of Geography Discipline Network's *Guides to good teaching, learning and assessment practices in geography*. Available: <http://www.chelt.ac.uk/gdn/guides/review.htm>
- GIBBS, G. (1999b). Improving teaching, learning and assessment. *Journal of Geography in Higher Education*, 23(2), 147–155.
- GLASSICK, C. E., HUBER, M. T. & MAEROF, G. I. (1997). *Scholarship assessed: Evaluation of the professoriate*. San Francisco: Jossey-Bass.
- GOSLING, D. (1996). What do UK educational units do? *International Journal for Academic Development*, 1(1), 75–83.
- GRAVESTOCK, P. & HEALEY, M. (Eds.). (1998). *Guides to good teaching, learning and assessment practices in geography* (10 guides produced under the HEFCE FDTL Program). Cheltenham: Cheltenham and Gloucester College of Higher Education, Geography Discipline Network. See also <http://www.chelt.ac.uk/gdn/index.htm>.
- HANDS-ON! (1998). Developing active learning modules on the human dimensions of global change. Available: http://www.aag.org/HDGC/Hands_On.html
- HATTIE, J. & MARSH, H. W. (1996). The relationship between teaching and research: A meta-analysis. *Review of Educational Research*, 66(4), 507–542.
- HAY, I., FOOTE, K. & HEALEY, M. (2000). From Cheltenham to Honolulu: The purposes and projects of the International Network for Learning and Teaching Geography in Higher Education. *Journal of Geography in Higher Education*, 24(2), 221–227.
- HEALEY, M. (1997). Geography and education: Perspectives on quality in UK higher education. *Progress in Human Geography*, 21, 97–108.
- HEALEY, M. (1998a, 19–22 April). *Developing and disseminating good educational practice: Lessons from geography in higher education*. Paper presented to the International Consortium for Educational Development in Higher Education's Second International Conference on "Supporting Educational, Faculty & TA Development within Departments and Disciplines", Austin, Texas. Available: <http://www.chelt.ac.uk/gdn/confpub/iced.htm>
- HEALEY, M. (1998b). Developing and internationalising higher education networks in geography. *Journal of Geography in Higher Education*, 22(3), 277–282. Available: http://www.chelt.ac.uk/gdn/jghe/22_3.htm#Healey
- HEALEY, M. (1998c, January 23). RAE and educational research in the disciplines [Letter]. *Times Higher Education Supplement*.
- HEALEY, M. (1999, 6–8 September). *Developing the scholarship of teaching geography in higher education*. Paper presented at the International Student Learning Symposium on "Improving Student Learning through the Disciplines", University of York, UK. Available: <http://www.chelt.ac.uk/gdn/confpubl/boston.htm>
- HEALEY, M. (2000, February 4). How to put scholarship into teaching. *Times Higher Education Supplement*. Available: <http://www.chelt.ac.uk/gdn/confpubl/thes.htm>
- HEALEY, M., FOOTE, K. & HAY, I. (Eds.). (2000). International perspectives on learning and teaching geography in higher education: a JGHE symposium. *Journal of Geography in Higher Education*, 24(2), 217–298.
- HEALEY, M. & GRAVESTOCK, P. (1998). Identifying and disseminating good practice in the teaching and learning of geography in higher education. In E. Bliss (Ed.) *Islands: economy, society and environment. Proceedings of the Institute of Australian Geographers and New Zealand Geographical Society second joint conference. University of Tasmania, Hobart 1997*. New Zealand Geographical Society Conference Series No. 19, pp. 363–367. Hamilton: New Zealand Geographical Society, University of Waikato. Available: <http://www.chelt.ac.uk/gdn/iagaag.htm>
- HEALEY, M. & JENKINS, A. (in press). Learning cycles and learning styles: Kolb's experiential learning theory and its application in geography in higher education. *Journal of Geography*.

- HEALEY, M., JENKINS, A., CLARK, G. & COTTINGHAM, C. (1999, 22–23 November). *Discipline-based educational development programs for new and established staff: Lessons and questions from one discipline*. Paper presented to Staff and Educational Developers Association Annual Conference, Manchester.
- HEALEY, M., JENKINS, A. & KNEALE, P. (2000). Small worlds on an interconnected planet: Teaching and learning geography in higher education. In C. Rust (Ed.), *Improving student learning through the disciplines* (pp. 131–140). Proceedings of the 7th International Symposium, Oxford Centre for Staff and Learning Development, Oxford.
- HEFCEs (1998). *RAE1/98 Research assessment exercise in 2001: Key decisions and issues for further consultation*. Bristol: HEFCE. Available: <http://www.rae.ac.uk/pubs/>
- HEFCEs (1999). *RAE 5/99 Assessment panels' criteria and working methods*. Bristol: HEFCE. Available: <http://www.rae.ac.uk/pubs/>
- HUTCHINGS, P., & SCHULMAN, L. S. (1999). The scholarship of teaching: New elaborations, new developments, *Change* (September/October), 11–15.
- JENKINS, A. (1995). The impact of research assessment exercises on teaching in selected geography departments in England and Wales. *Geography*, 80, 367–374.
- JENKINS, A. (1996). Discipline-based educational development. *International Journal for Academic Development*, 1(1), 50–62.
- JENKINS, A. (1997). Twenty-one volumes on: Is teaching valued in geography in higher education? *Journal of Geography in Higher Education*, 21(1), 5–14.
- JENKINS, A. (1998). *Curriculum design in geography. A HEFCE FDTL Project Guide*. Cheltenham: Cheltenham and Gloucester College of Higher Education, Geography Discipline Network.
- JENKINS, A. (2000, January, 19–20). *Summary/review of the research and scholarly evidence on teaching/research relationships in higher education*. Paper presented to the seminar The Relationship Between Research and Teaching in Higher Education: Present Realities, Future Possibilities, Southampton Institute, Southampton.
- JENKINS, A. (2000). The relationship between teaching and research: where does geography stand and deliver? *Journal of Geography in Higher Education*, 24(3).
- JENKINS, A., BLACKMAN, T., LINDSAY, R. & PATON-SALTZBERG, R. (1998). Teaching and research: student perspectives and policy implications. *Studies in Higher Education*, 23(2), 127–141.
- JENKINS, A. & HEALEY, M. (2000, April). Getting disciplined: Geographic perspectives. *HERDSA News*, 22(1), 11–13.
- JOHNSTON, R. J. (1996a). Quality in research, quality in teaching and quality in debate: A response to Graham Gibbs. *Quality in Higher Education*, 2(2), 165–170.
- JOHNSTON, R. J. (1996b). And now it's all over, was it worth all the effort? (Editorial II). *Journal of Geography in Higher Education*, 20(2), 159–165.
- KEMMIS, S., MARGINSON, S., PORTER, P., & RIZVI, F. (1999). *Enhancing diversity in Australian higher education: A discussion paper*. Victoria: Stephen Kemmis Research & Consulting Pty. Available: http://www.acs.uwa.edu.au/open_discuss/report.html
- KNAPPER, C. (1997). Five questions about academic development (Editorial). *International Journal for Academic Development*, 2(1), 5–7.
- KOLB, D. A. (1994). Learning styles and disciplinary differences. In K. A. Feldman, & M. B. Paulsen (Eds.), *Teaching and learning in the college classroom* (pp. 151–164). Needham Heights, MA: Ginn Press.
- KREBER, C. (1999). A course-based approach to the development of teaching-scholarship: A case study. *Teaching in Higher Education*, 4(3), 309–325.
- KREBER, C. (2000). How university teaching award winners conceptualise academic work: Some further thoughts on the meaning of scholarship. *Teaching in Higher Education*, 5(1), 61–78.
- KRUGEL, P. (1993). How professors develop as teachers. *Studies in Higher Education*, 18(3), 315–328.
- LOWE, M. S., & SHORT, J. R. (1990). Progressive human geography. *Progress in Human Geography*, 14(1), 1–11.

- MARTIN, E., BENJAMIN, J., PROSSER, M., & TRIGWELL, K. (1999). Scholarship of teaching: A study of the approaches of academic staff. In C. Rust (Ed.), *Improving student learning: Improving student learning outcomes* (pp. 326–331). Oxford: Oxford Centre for Staff and Learning Development, Oxford Brookes University. Available: <http://www.creativecontingencies.com/joanb/>
- MARTIN, E., PROSSER, M., CONRAD, L., TRIGWELL, K., & BENJAMIN, J. (1998, October 7). Communicating the Scholarship of Teaching. *Developing scholarship in teaching* [On-line]. Available: <http://www.creativecontingencies.com/joanb/>
- MCKERNAN, J. (1996). *Curriculum action research: A handbook of methods and resources for the reflective practitioner*. London: Kogan Page.
- MENGES, R. J., WEIMER, M., & ASSOCIATES (1996). *Teaching on solid ground: Using scholarship to improve practice*. San Francisco: Jossey-Bass.
- MOSES, I. (1990). Teaching, research and scholarship in different disciplines. *Higher Education*, 19, 351–375.
- PROSSER, M., & TRIGWELL, K. (1999). *Understanding learning and teaching: The experience of higher education*. Buckingham: Society for Research into Higher Education and Open University Press.
- QAA (Quality Assurance Agency for Higher Education) (2000). *Benchmark statement for geography*. Gloucester: QAA. Available: <http://www.chelt.ac.uk/gdn/qaa/index.htm>
- RAMSDEN, P. (1992). *Learning to teach in higher education*. London: Routledge.
- RAMSDEN, P., & MARTIN, E. (1996). Recognition of good university teaching: Policies from an Australian study. *Studies in Higher Education*, 21, 299–315.
- RAMSDEN, P., & MOSES, I. (1992). Associations between research and teaching in Australian higher education. *Higher Education*, 23, 273–295.
- RICE, E. R. (1995). Forward. In R. M. Diamond & B. A. Adam (Eds.), *The disciplines speak: Rewarding the scholarly, professional, and creative work of faculty* (pp. v–vii). Washington, DC: American Association for Higher Education.
- ROBINSON, G., CASTLEFORD, J., & HEALEY, M. (1998). Consorting, collaborating and computing: The GeographyCal project. In E. Bliss (Ed.), *Islands: economy, society and environment. Proceedings of the Institute of Australian Geographers and New Zealand Geographical Society second joint conference. University of Tasmania, Hobart 1997*. New Zealand Geographical Society Conference Series No. 19, pp. 363–367. Hamilton: New Zealand Geographical Society, University of Waikato. Available: <http://www.chelt.ac.uk/gdn/iagaag.htm>
- SCHON, D. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- SCHON, D. (1995). The new scholarship requires a new epistemology. *Change* (November/December), 27–34.
- SCHULMAN, L. S. (1993). Teaching as community property: Putting an end to pedagogical solitude. *Change* (November/December), 6–7.
- SCHULMAN, L. S. (1999). Taking learning seriously. *Change* (July/August), 11–17.
- TRIGWELL, K., MARTIN, E., BENJAMIN, J., & PROSSER, M. (1999). Why and how can teaching be scholarly. In C. Rust (Ed.), *Improving student learning: Improving student learning outcomes* (pp. 331–339). Oxford: Oxford Centre for Staff and Learning Development, Oxford Brookes University, Available: <http://www.creativecontingencies.com/joanb/>
- WAREING, S. (1999). Comment on an earlier draft of this paper. Available: <http://www.chelt.ac.uk/gdn/discuss/comment1.htm#Comment1>
- WEBSTER, D. S. (1985). Does research productivity enhance teaching? *Educational Record*, 66, 60–63.
- WEIMER, M. (1993). The disciplinary journals of pedagogy. *Change* (November/December), 44–51.
- WEIMER, M. (1997). Assumptions that devalue university teaching. *International Journal for Academic Development*, 2(1), 52–59.

- WILLIS, D., HARPER, J., & SAWICKA, T. (1999, July 12–15). *Putting the worms back in the can: Encouraging diversity in the teaching research nexus*. Paper presented at HERDSA Annual International Conference, Melbourne. Available: <http://herdsa.org.au/vic/html/cornerstone.html>
- WOODHOUSE, D. (1998). Auditing research and the research/teaching nexus. *New Zealand Journal of Educational Studies*, 33(1), 39–53.
- WRIGHT, A. (1995). Teaching improvement practices: International perspectives. In A. Wright (Ed.), *Successful faculty development: Strategies to improve university teaching*. Bolton: Anker.