

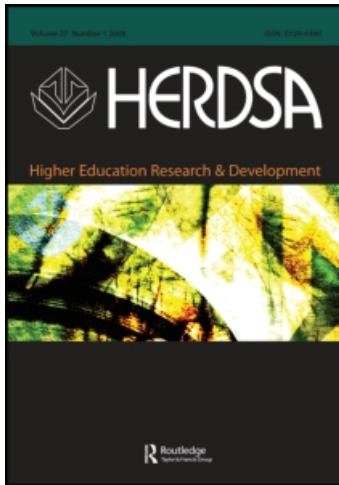
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## Higher Education Research & Development

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713423834>

### Teaching and Research: New relationships and their implications for inquiry-based teaching and learning in higher education

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Online Publication Date: 01 May 2003

**To cite this Article** Brew, Angela(2003)'Teaching and Research: New relationships and their implications for inquiry-based teaching and learning in higher education',Higher Education Research & Development,22:1,3 — 18

**To link to this Article:** DOI: 10.1080/0729436032000056571

**URL:** <http://dx.doi.org/10.1080/0729436032000056571>

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# Teaching and Research: New relationships and their implications for inquiry-based teaching and learning in higher education

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**ABSTRACT** *In order to bring teaching and research together, a fuller understanding of how academics conceptualise research and scholarship is needed. The paper discusses different ways in which research and scholarship are conceptualised and then provides two alternative models of the relationship between teaching and research based on different conceptions of teaching and different ideas about the nature of knowledge. The paper suggests that if the relationship between teaching and research is to be enhanced it is necessary to move towards a model based on the notion of academic communities of practice. The implications for higher education of doing this are then examined. It is argued that there is a need to reconceptualise the role of higher education and to renegotiate relationships between teachers and students.*

## Introduction

A number of articles on the relationship between teaching and research, pointing to the failure to demonstrate statistically a connection between them, have indicated that efforts should be made to actively bring research and teaching together. Shore, Pinkler and Bates (1990), for example, suggest that research may serve as a model for teaching, while Barnett (1997) calls for teaching to become more research-like. Hattie and Marsh (1996) suggest that marrying teaching and research by enhancing the relationship between them is a desirable aim of universities.

The suggestion that teaching and research should be more firmly drawn together should not be seen as an argument for educating all students to become academics, nor is it merely an academic exercise to prop up arguments that all academics should engage in research. Rather, it is a response to a number of changes in higher education which have challenged the relationship. These include: the move to a mass higher education system (Elton, 1992; Westergaard, 1991), the amount of time available both for teaching and for research (Hattie & Marsh, 1996), as well as changes in the nature of research and in the nature of teaching in higher education (Rowland, 1996) and changes in the nature of knowledge (Brew, 1999a). Also of relevance is a changed policy context, which Elton (1992) argues has given urgency to questions about the relationship between teaching and research.

This work is matched by a concomitant and growing interest in bringing research and teaching together within higher education institutions themselves. The motivation for doing this can be seen as a response to disquiet in the academic community concerning the effects of particular funding models on the nature of academic work. In countries where there is a dual funding model, with teaching and research each being funded separately, such as in the UK or Australia, this is particularly acute. The motivations, however, appear to be different in different kinds of institution. On the one hand, there are the research universities who are seeing “research-led teaching” by active researchers as part of their competitive advantage. The idea is that students enjoy being taught by active researchers (Ramsden, 2000), research-based institutions are full of these, and therefore the link should be exploited. On the other hand, motivations for bringing research and teaching together in institutions not strong in research can be viewed as a bid to ensure that a wedge is not drawn between teaching institutions and research institutions.

A problem we have is that these calls to bring teaching and research together come at a time when many are critically questioning the role of universities, their status and function in society and the role of academic research in this; indeed, when academic research is in crisis (Brew, 2001a). This comes from such factors as growing interference from outside the academy in the setting of research agendas, increased interest in research findings by an educated public and changes in higher education which are having effects on the amount of time available for research. In addition, velocity in accessing information across the globe is making heavy demands on academics and changing the character of research. At the same time, there are intellectual crises which have thrown ideas about knowledge and methods of investigation right into the melting pot. Academic research occupies contested space, intellectually, socially and politically (Brew, 2001a).

The idea that teaching and research should be brought together underpins much of the US literature on the nature of scholarship, for the changing context and climate of universities and their changed relationship to society is also of concern there. Unease about universities’ roles and missions has been reflected in calls to redefine or to expand this concept (see for example Boyer, 1990; Rice, 1992; Scott & Awbrey, 1993). Concern about the status of teaching vis à vis research has provided an additional rationale (Leatherman, 1990; Mooney, 1990; Ruscio, 1987). Research in the twentieth century, it has been argued, has been conceptualised too narrowly as the publication of fundamental knowledge based on technical rationality (Scott & Awbrey, 1993; Rice, 1992; Schön, 1995).

Not only do our institutions have diverse missions—commitments to serving a wide range of scholarly needs within region, states and action—but also there is the special commitment to the education of an increasingly diverse population, to the intellectual preparation of the educated citizenry necessary for making a genuinely democratic society possible. Scholarship in this context takes on broader meaning. (Rice, 1992)

The need for academic work to result in a greater connection between the university and outside and the need for a greater sense of connectivity within the

university community have also been noted (Scott & Awbrey, 1993). Schön (1995) argues that new definitions of scholarship point to the need to change institutional epistemology to take account of the requirements of professional practice.

One of the problems we have in interpreting the American literature on scholarship, however, is that in Australia and in the UK, for example, the terms “research” and “scholarship” are used rather differently to the way that they are used in the USA. In order to bring teaching and research together, we need greater clarity about precisely which aspects of research and scholarship academics are focusing on. It is important to be clear what we mean by research, what we understand by scholarship and how these ideas are related to conceptions of knowledge and approaches to teaching, for as Robertson and Bond (2001, p. 16) argue: “fundamental questions persist about the definitions and shared understandings of such terms as knowledge, research, teaching and learning”. Different ideas about the nature of research, scholarship, teaching and knowledge have different consequences for how we bring teaching and research together.

A model is needed which explains the relationship between teaching and research in a changing higher education context and which takes account of these different understandings. Such a model can be used to understand and to guide how we can bring research and teaching closer together to enhance both.

In the next section of this article, the variation in how academic researchers conceptualise research and scholarship is discussed and different understandings of the nature of knowledge and different approaches to teaching are outlined. Then, two models for conceptualising the relationship between teaching and research are presented. These provide the basis for examining suggestions for how teaching and research should be brought together. By recognising the variation in conceptions of these phenomena and taking account of the idea of communities of practice, we are led to a fuller understanding of what we are trying to achieve in bringing research and teaching together and why. Finally, the article examines the implications of this model for teaching and learning in higher education for the future.

### **Understanding Variation in Conceptions**

In this section, I draw on research to understand the variation in conceptions of research, conceptions of scholarship, conceptions of knowledge and approaches to teaching. This provides the groundwork for developing the two alternative models of the relationship between teaching and research to follow.

#### *Conceptions of Research*

In delineating variation in academics’ conceptions of research, I have earlier made a distinction between, on the one hand, conceptions of research which are atomistic and synthetic with an orientation towards external products and where the intention is to produce an outcome, and on the other, conceptions which are holistic and analytical with an orientation towards internal processes and where the intention is to understand (Brew, 1999a; Brew, 2001b). The latter may more readily be

Research is oriented towards: ↓	Research aims to: ↓	The researcher is present to, or the focus of, awareness	The researcher is absent from, or incidental to, awareness
External products	Produce an outcome	Trading view	Domino view
Internal processes	Understand	Journey view	Layer view

FIG. 1. Relationships between conceptions of research.

subsumed under the notion of inquiry and result in curricula designs focusing on engaging students in various forms of investigation. However, the former opens up ideas of research as a social phenomenon and may suggest engagement in a wide range of social networks and outputs.

The work on which these findings were based was an investigation of conceptions of research of fifty-seven senior Australian academics. Four qualitatively different conceptions of research were identified (Brew, 1998; 1999a). The structure of the variation in conceptions has already been published (Brew, 2001b). This is summarised in Figure 1 and an explanation is provided below, together with unpublished quotations from the interview data.

In the domino view, the researcher's focus is on the solutions to problems and the answering of questions, i.e. it is *external* to the activities of doing the research. It looks outside the immediate context of the research. For example: "*you are trying to basically come up with a solution to the problem that you or others have identified for you, and you're hoping at the end of finding this solution you're able to push the frontiers of knowledge*". In the trading view of research, in the foreground are the products of research: the end points, publications, grants and social networks, i.e. aspects external to the process of doing the research. These are viewed as being linked together in relationships of recognition and reward. For example: "*I know a fair number of the people ... And I'm also writing papers, I've done a few papers on [the subject] and I gave one at Cambridge and one in London in July, ... and I'm also interested in editing*".

In contrast, in the layer way of conceptualising research the focus looks inward. It is *internal* because in the focus of awareness are the data containing ideas together with (linked to) hidden meanings. For example: "*Research is ... very purposive, systematic attempt to generate reliable, systematic information. So ... you're trying to assemble it into meaningful patterns and orders ...*". Here, research is interpreted as a process of discovering, uncovering or creating underlying meanings (Brew, 2001b).

There are also differences in conceptions according to whether the researchers themselves are the focus of awareness or whether the researcher is essentially absent from, or incidental to awareness. For example, in both the domino and the layer views of research, the researcher is not in the focus of awareness. This is in contrast to the other two views where the researcher is the primary focus. The focus in the trading view is on the social aspects and the perceptions of the researcher's career.

In the fourth category of description, the journey view, in the foreground are the personal existential issues and dilemmas of the researcher, linked through an awareness of the career of the researcher and viewed as having been explored for a long time. For example: “*You go and do your field work, and however you come back you’re going to be different than you were before you underwent the ritual*”. So the researcher is the focal point of awareness. Research is interpreted as a personal journey of discovery possibly leading to transformation.

Although this investigation did suggest that researchers differ in the extent to which the subject matter of their research is fore-grounded, its focus was on the variation in the ways research in general was understood. It did not seek to examine researchers’ conceptions of the subject matter of their research. However, there was no evidence to suggest that the categories were tied to any specific disciplinary area.

### *Conceptions of Scholarship*

Many different frameworks to describe scholarship have been suggested in the US literature and a wide range of teaching, research and community service activities have been presented as important elements of it (see for example, Paulsen & Feldman, 1995; Podgorecki, 1997; Sundre, 1992). This work is exemplified, perhaps most notably, in the work of Boyer and colleagues at the *Carnegie Foundation for the Advancement of Teaching* (Boyer, 1990). Investigations into undergraduate education led them to suggest a fourfold definition which, they argue, corresponds to different approaches to the ways knowledge is perceived and approached: the advancement of knowledge, its application, representation and integration in society. The scholarship of discovery, Boyer (1990) suggests, comes closest to the idea of “research”. It contributes to the “stock of human knowledge” and also to the intellectual climate of the institution. The scholarship of integration is concerned with making inter-disciplinary connections:

In calling for a scholarship of integration, ... what we mean is serious, disciplined work that seeks to interpret, draw together, and bring new insight to bear on original research. (Boyer, 1990, p. 19)

The third type of scholarship defined by Boyer and his colleagues is the scholarship of application. This draws attention to the application of knowledge in the wider community. There is a caution against seeing theory and practice separate, for what is envisaged is a dynamic interaction where the “one renews the other” (Boyer, 1990, p. 23). Finally, there is the scholarship of teaching. This involves well-informed teachers and teaching which is carefully planned, continuously evaluated and relates to the subject taught. It is teaching which encourages active learning and encourages students to be critical creative thinkers with the capacity to go on learning after their university days are over; and a recognition that teachers are also learners (Boyer, 1990, p. 24).

Boyer and colleagues have been criticised for presenting a normative framework and this is also true of the work of Paulsen and Feldman (1995) whose work has similarities. They also suggest a fourfold distinction: the scholarship of research and

graduate training, which is like Boyer's scholarship of discovery; the scholarship of teaching, which is the same category; the scholarship of service which, they argue, is like Boyer's scholarship of application. However Paulsen and Feldman point to another category, that of the scholarship of academic citizenship, which they suggest performs the function of integration in academic work. It is about being a good academic citizen, i.e. attending committees, refereeing papers, etc.

Considerable confusion about what is understood by scholarship is caused when the ideas developed in the US are straightforwardly applied in UK or Australasian contexts. For in the US, the concept of scholarship is used to apply to a wide range of academic activities, which in other contexts might more usually be described as "academic work". Furthermore, these schemas describe the activities which constitute scholarship, they do not describe the variation in how scholarship is viewed by academics. An exception is the work of Sundre who suggests four rather different dimensions: pedagogy; publication and professional recognition; intellectual characteristics of scholars and creative and artistic attributes (Sundre, 1992).

There is a very real question concerning whether these same dimensions would be found outside the US context where confusion concerning what is understood by scholarship has been noted (Elton, 1986; 1992; Neumann, 1993; Westergaard, 1991). In my investigation of academics' conceptions of research within the Australian context, the concept of scholarship was sometimes used to describe understandings of research, so it was possible also to identify five conceptions of scholarship in the data (Brew, 1999b). These do not parallel the dimensions found in the American context mainly because they describe not the activities carried out as scholarship, but the ways in which academics think of it.

There was firstly the view among some researchers that the distinction between research and scholarship is unclear, non-existent even. Scholarship was equated with research and interpreted as not making any sense on its own.

Alternatively, scholarship was interpreted as the preparation for research. Elton (1992) refers to this as the interpretation of what is already known, the primary work that feeds into everything else academics are supposed to do. Otherwise, scholarship was viewed as building on the idea of preparation and interpreted as the process of adding new knowledge to the existing literature. In a more complex idea of scholarship, the focus was on grounding new ideas and discoveries in the literature and then disseminating them through publication and teaching.

Quite distinct from conceptions of scholarship which focus on particular activities, is the notion of scholarship (following Neumann, 1993) as a quality of the ways in which academic work is done. Westergaard (1991) prefers the concept of "critical inquiry" but insists:

research and academic teaching are indivisible because—but also only just so long as—they share with the scholarship which should feed into both alike that spirit of active enquiry which is higher education's *raison d'être*.  
(Westergaard, 1991, p. 28)

Scholarship in this conception is interpreted as the way academics demonstrate professionalism. It is demonstrated in an emphasis on attention to detail which

includes logic, use of evidence, work properly referenced, spelling and grammar correct, etc. It was also about having the technical knowledge to engage in inquiry.

A heightened knowledge about the ways in which academic researchers conceptualise research and scholarship throws new light on the relationship between teaching and research. However, before examining this, we need to look at the variation in conceptions of knowledge and conceptions of teaching.

### *Conceptions of Knowledge*

I have earlier suggested that the relationship between teaching and research has been changing and that different conceptions of teaching and different conceptions of knowledge have different consequences for bringing research and teaching together (Brew, 1999a). So next we need to explore these different understandings.

While there have been a number of studies examining children's conceptions of knowledge and much discussion of changing ideas of knowledge in the theoretical literature (see for example Barnett & Griffin, 1997; Mourad, 1997; Gibbons *et al.*, 1994), there has not been, as far as I have been able to ascertain, an empirical study of conceptions of knowledge among academics. In my earlier article (Brew, 1999a) I differentiated two conceptions of knowledge. On the one hand there is the idea that research is the creation or discovery of a body of knowledge which is perceived as detached or separated off from the people who developed it. Knowledge tends to be crudely viewed here as a quantity of something which we are building up, frequently presented as having a correspondence relationship with the world and giving descriptions of a pre-existent reality (Mourad, 1997).

The other way of viewing knowledge can be seen in traditions such as hermeneutics, phenomenological psychology and critical theory. Here, knowledge is viewed as more subjective; as a product of interpretation and negotiation. It explicitly recognises that learning always takes place in a particular context and influences and is influenced by that context (Marton *et al.*, 1997); that it always takes place within a cultural tradition of knowledge much of which is derived from past research.

If knowledge which is generated through research is viewed as objective and separate from knowers, it would seem consistent to think that it requires transmission and absorption through a separately conceptualised teaching process. If on the other hand knowledge is viewed as a product of communication and negotiation, the links between research and teaching are, I believe, viewed quite differently since the relationship between research and learning becomes an intimate one. In other words, relationships between teaching and research are different in a tradition which views itself as heavily dependent on an empiricist or Enlightenment philosophy to those which become evident within a pluralistic context. When research and teaching are both viewed as being founded on a traditional empiricist framework, the relationship is always problematic. A move towards a more pluralistic view of knowledge which fully takes on board the interpretive

nature of academic work means that research and teaching can be viewed as being in a symbiotic relationship. (Brew, 1999a, p. 296)

### *Approaches to teaching*

Prosser and Trigwell (1999) have demonstrated that higher education teachers hold qualitatively different conceptions of teaching and learning and that the different ways in which they approach their teaching are related to the differences in these conceptions. For example, those teachers who conceptualise their teaching as being about transferring information from the syllabus to students are associated with an approach to teaching based on an idea of the teacher as the focal point. This is labeled an “information transmission/teacher focused” approach to teaching. On the other hand, an approach to teaching which is focused on endeavouring to change the students’ conceptions of the phenomena of their study is associated with an emphasis on the student as central. This has been called a “conceptual change/student focused” approach (see for example, Trigwell & Prosser, 1996).

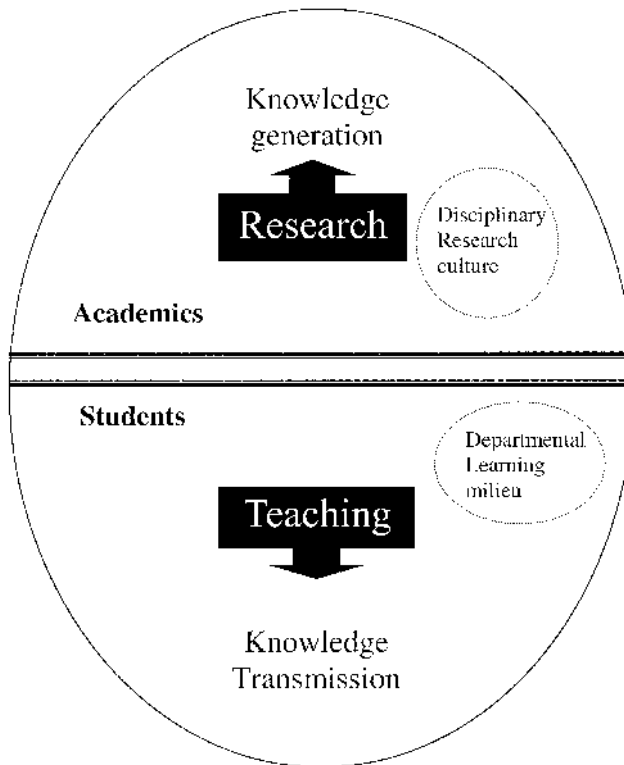
These approaches have been found to be related to students’ approaches to learning in that an “information transmission/teacher focused” approach to teaching is associated with a surface approach to learning and a conceptual change/student focused approach to teaching is associated with a deep approach to learning (Trigwell, Prosser, & Waterhouse, 1999).

### **Models of the Relationship Between Teaching and Research**

Looking at the relationship between teaching and research with these understandings of the ways in which academic researchers conceptualise research and scholarship, and different conceptions of knowledge and teaching, two different models of the relationship are clearly seen. One model is based on an idea of academic disciplines more or less aligned with academic departments, with a conception of knowledge as objective and separate from knowers, research being concerned with the building up of bodies of knowledge within a research culture consisting of other academics and researchers.

The conception of teaching in this model of the relationship between teaching and research is focused on the teacher and concerned with the transmission of information to the students within a separate learning milieu which has little overt connection with the research culture. This is graphically represented in Figure 2. The two lines in the middle represent the way that in this model teaching and research constantly pull away from each other, vying for resources and academics’ time. The model also allows the possibility of teaching and research to take place quite independently of each other in separate institutions, a point which is a cause of concern in the UK, Australia and elsewhere. I think of this as an old model, but of course it is still current. Indeed it currently defines the ways in which the relationship between teaching and research is conventionally viewed. Many suggestions for ways to enhance the relationship between teaching and research implicitly assume this model.

*Conception of Knowledge: objective & separate from knowers*



*Conception of Teaching: Teacher Focused, Information Transmission*

FIG. 2. Model of the relationship between teaching and research.

### *A New Model*

However, as conceptions shift, we need a new model, one which focuses on a conception of teaching as student-focused, conceptual change and a conception of knowledge as constructed within a socio-political context. The new model integrates Lave and Wenger's (1993) ideas of situated learning; ideas from the Boyer Commission on redefining the nature of academic work and undergraduate education (Boyer Commission, 1999); Prosser and Trigwell's (1999) work on conceptions of teaching as well as my work on conceptions of knowledge, of research and of scholarship outlined above (Brew, 1998; 1999a; 1999b; 2001b). It presents a new, albeit somewhat idealistic, vision which challenges us to re-think the nature of higher education.

The Boyer Commission on Reinventing Undergraduate Education in Research Universities in the US (Boyer Commission, 1999), building on their ideas of four kinds of scholarship (Boyer, 1990), suggests ten ways to change undergraduate education. Central to their suggestions is the idea that we must cultivate a sense of community. Developing academic communities of practice in which both academics and students are engaged clearly implies changes in relationships. The Boyer

Commission argues that what is needed is a new model of undergraduate education which views what students learn as a complete whole; a whole which is intimately connected to the emphasis on research and scholarship of universities.

As I am sceptical about the continuing usefulness of the concept of discipline, I want to base the new model on the idea of academic communities of practice. Lave and Wenger argue that learning needs to be seen as a social practice. It consists of what they call legitimate peripheral participation in communities of practice.

A community of practice is a set of relations among persons, activity and world over time and in relation with other tangential and overlapping communities of practice. (Lave & Wenger, 1993, p. 98)

We can treat academic departments, disciplines, sub-specialisms, a university as a whole, or networks of professionals as communities of practice. In an academic community of practice, students, academics, professionals and indeed anyone else who shares this site of practice, are responsible for the maintenance of the community of practice for inducting newcomers into it, for carrying on the tradition of the past and carrying the community forward to the future. Persons (students and staff) engage in legitimate peripheral participation in such communities of practice.

Research and scholarship clearly take place within academic communities of practice. Boyer's notions of scholarship may be said to provide a map of the kinds of activities which people engage in and there is, as we have seen, variation in how academics conceptualise such activities.

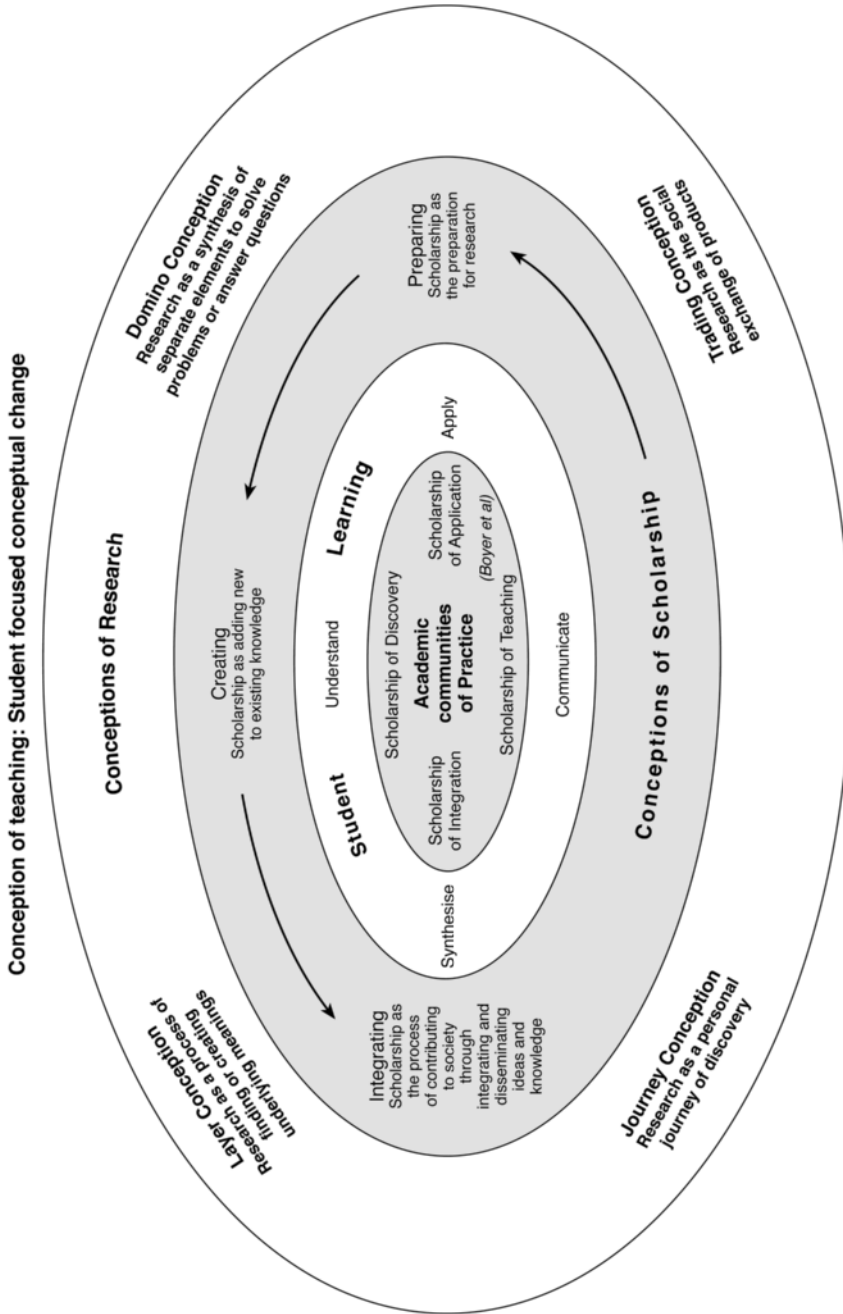
We saw that the old model presupposed a conception of teaching that was teacher-focused and concentrated upon information transmission. In the new model (see Figure 3) we have a conception of teaching as being student-focused and concentrating on conceptual change.

In the old model the dominant conception of knowledge was as objective and separate from knowers. Here with our academic communities of practice, knowledge is more likely to be a process of construction.

In the new model, then, research and teaching are both viewed as activities where individuals and groups negotiate meanings, building knowledge within a social context. What researchers understand research and scholarship to be are key influences in how we conceptualise the nature of student learning within this new context. For when academics talk about research and scholarship, different aspects are in the foreground of their awareness and other aspects recede to the background as we have seen. In the new model, teachers' and students' activities are not viewed as separate. In engaging in research, scholarship or learning, they engage as legitimate peripheral participants in academic communities of practice.

### **Implications for Teaching and Learning**

So what are the implications of this new model of the relationship between teaching and research for teaching and learning in higher education? What does the model mean for the kinds of teaching and learning practice we engage in? The challenge



**Conception of knowledge: Constructed through communication and negotiation**

FIG. 3. New model of the relationship between teaching and research.

which faces us is how to develop academic communities of practice where participants are, on the one hand, prepared to cope with uncertainty and super-complexity in a pluralistic world (Barnett, 2000) and, on the other, ready and able to change (world) views in the light of new information. We know that this is what research is essentially about.

### *Reconceptualising Higher Education*

Meeting this challenge requires, I suggest, no less than radical reconceptualisation of higher education itself. The reconceptualisation to which I am referring implies that there is a critical challenge of ideas for both teachers and students; what Barnett (1997) calls “critical action”.

This means seeing problems as discrete but interconnected, developing the strategies, techniques, tools, knowledge and experience needed to solve unforeseen problems. This is essentially the domino view of research. Critical challenge means changing world views and being prepared to change them sometimes radically so that the ways we saw the world before are completely overturned (Brew, 1993), and being open to the unplanned and unexpected (Brew & Boud, 1995). It means learning which appreciates the importance of context, the significance of different interpretations and revision on the basis of looking again. It also points to teaching which encourages active learning, critical creative thinkers and lifelong learning.

Reconceptualising higher education in a community of practice where teaching and research are integrated also means that we should be open to the dissemination through teaching not just of academic teachers, but also of students. The Boyer Commission (1999) suggests that we should educate graduate students as apprentice teachers. The trading view of research and the integration conception of scholarship both point to the role of teaching in research and scholarship. This might mean the use of peer teaching for both teachers and students, the production of published or publishable work recognition and reward coming from student peers. It might mean encouraging student publications, e.g. journals and it might also mean the encouragement of collaborative networks with opportunities to engage in student conferences and debates (perhaps electronically).

Perhaps the most radical aspect of this reconceptualisation of higher education is the integration of the personal and professional. We saw with the journey conception of research that research fulfils the personal aims and existential needs of the researcher. It thus has an important role in teaching researchers about themselves. This points to the possibility of placing a greater emphasis on the personal relevance of the subject of study to the student, the development of self-knowledge or an exploration of existential life issues in curricula, personal growth and development becoming an integral part of university study. Clearly students do this to some extent anyway, particularly where they live away from home, but what I am suggesting here is more radical. Within such a culture of inquiry a negotiated conception of knowledge and a breaking down of the distinction between subjective and objective is implied in the integration of the personal and the professional.

Rigour becomes an aspect of professionalism; not a rule-bound pursuit of objectivity. The Boyer Commission (1999) suggests that research-based learning should be standard and that the first year should be inquiry-based. Brew and Boud (1995) suggest that teaching and research are part of the same enterprise; that they can be brought together by employing the concept of learning. Both research and learning, they suggest, involve personal growth and are, in this sense, developmental.

### *Changed Relationships Between Teachers and Students*

The development of academic communities of practice where both students and academics engage as legitimate peripheral participants cannot take place without the relationships between students and their teachers changing. What I have suggested means breaking down the distinction between teaching and learning as both teachers and students explore the issues which confront them. The development of what I have called academic professionalism among both students and their teachers is to reconceptualise that relationship.

Both learning and research are about making meaning. Research and learning both involve the pursuit of intellectually challenging ideas (Mourad, 1997). Bowden and Marton (1998) suggest that both learning and research are concerned with discerning the critical features of phenomena. Both teaching and research involve exploring existing knowledge and trying to go beyond it. Both involve the human act of making sense of the world (Brew & Boud, 1995). This is essentially the layer conception of research since in this conception, research is interpreted as a process of discovering or generating underlying meanings.

Brew and Boud (1995) suggest using resources to aid the process, using evidence, setting goals and planning; for both learning and research involve thinking and critical reflection. If the task is to mentor students to become professional scholars, then the ways in which they are treated even in the early years of their study are crucial. The Boyer Commission stresses the importance of students engaging in a keystone experience where they integrate their learning from different disciplinary areas. Hattie and Marsh (1996) stress the importance of emphasising uncertainty, encouraging a deep approach to learning and emphasising the construction rather than the imparting of knowledge, involving students in “artistic and scientific productivity” (Hattie & Marsh, 1996, p. 534).

Following an investigation of students’ conceptions of their teachers’ research, Jenkins *et al.* (1998) argue that opportunities for motivating students through involving them in discussions of their teachers’ research are frequently lost. Students are often ignorant of the research their teachers are doing yet would like to know more. Students should, they argue, not only have opportunities to benefit from their teachers’ research, they should be more often involved in helping to carry it out. Attention should be given in curriculum design to how staff research can benefit student learning. A community of practice implies a much greater degree of sharing than perhaps is common in our institutions of higher education currently. All too often, students are alienated from the community at a very early stage of their

studies because they are treated as second class citizens. The implications of bringing research and teaching together within academic communities of practice, mean that students would be treated as the adult people they are, with something valuable to contribute as well as to learn.

I am not merely referring here to those students who are likely to engage in further study or become academics themselves as a career. Neither am I merely referring to students in small, elite, research-based institutions. Rather, what I am suggesting is that for all students, no matter what their ability or study motivation, the pursuit of professionalism embodied in the quality conception of scholarship can be a useful foundation for whatever the student engages in when they graduate. The ability to carry out a rigorous systematic process of inquiry and the capacity to apply the skills so acquired in a range of different contexts needs to be developed. As such, the model I have proposed is a key to the future of a mass higher education system. As Barnett (2000) suggests, in a context of uncertainty and super-complexity, research needs to teach us how to live. This is where and how it can happen.

## Conclusion

If higher education is to be reconceptualised, and if relationships between teachers and students are to change, as I am suggesting here, we need, as the Boyer Commission (1999) recognises, to change reward systems for academics. Hattie and Marsh (1996) similarly point to the need to ensure public awards for teaching. They argue that creativity, commitment, inquisitiveness and critical analysis should be rewarded in both teaching and research. As Jenkins and colleagues (1998) recognise, bringing research and teaching together requires policy and management decisions. It requires policies requiring measures of teaching quality to include how individuals integrate their research into their teaching. Jenkins *et al.* (1998) suggest that what is needed are policies requiring departments to monitor and identify how research impacts upon and supports the undergraduate curriculum. Such policies might at the very least ensure, as Hattie and Marsh (1996) recommend, that the best researchers teach across all levels of students. They might, however, go beyond this to do as the Boyer Commission (1999) suggests and remove barriers to inter-disciplinary education.

In this paper, I have argued that if we are truly serious about developing the links between teaching and research, we must take account of how academics conceptualise research and scholarship. If we do this we are led to consider working with students in academic communities of practice. This means reconceptualising higher education. It means sharing power and it means being open to challenge. So the final question is this: are we ready to really take up the challenges of bringing research and teaching together? Is this where the future of higher education lies?

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