

The Research-Teaching Nexus: Tensions and Opportunities¹

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Abstract

To deny that there is a tension between research and teaching activities and demands at most management education institutions would be disingenuous. But it would be equally disingenuous to deny the productive synergies and reciprocities between knowledge creation, dissemination and application. Scholarship and education are the twin pillars that serve as the foundation of most academic management education institutions. Yet there are two trends prevalent in the more prestigious research universities: that excellence in scholarship and education are both critical to faculty selection and promotability, and that one of these pillars (research) is more strongly encouraged and rewarded than the other, exacerbating the tension and impeding the realization of effective institutional balance. This chapter examines the apparent dichotomy between teaching and research and the relationship between them. In the chapter, we assess the dominant paradigm for faculty recognition in leading business schools, and question the assumptions on which it is grounded. Examining data from studies that have explored the relationship between faculty research productivity and

teaching excellence, we discuss those findings and their implications for current and future faculty reward systems and institutional priorities.

One of the most strongly held ideologies – and values – in the academic community of the modern research university – embraced by faculty and administrators alike – is that there is a strong, positive, and mutually reinforcing relationship between a faculty member's teaching effectiveness and research accomplishments. The belief is embodied in the hiring practices of most academic units in these institutions, and most visibly endorsed in their annual review, promotion and tenure standards. While these academic units occasionally take the initiative to hire lecturers and clinical professors (whose only responsibility is teaching) or research professors (whose only responsibility is to secure grants and publish in leading journals), the premier and most prestigious academic appointment is in the primary tenure-track, where both research productivity and instructional effectiveness are regularly monitored and assessed.

The origins of this perspective are deeply rooted in the history of the university itself, although not necessarily traceable to its origins. Newman (1853), in his book, *The Idea of a University*, commented that:

... to discover and to teach are distinct functions; they are also distinct gifts, and are not commonly found united in the same person. He, too, who spends his day in dispensing his existing knowledge to all comers is unlikely to have either leisure or energy to acquire new (p. 10)

Leinster-Mackay (1978), examining the origins of the university, claims that it can be traced back to Arabic cultures and that the primary function was as a teaching institution; in fact, the baccalaureate degree takes its name from the Arabic *baccalaureus*, meaning 'with the right to teach on the authority of another' (as quoted in Hattie & Marsh, 1996). However, the increased emphasis on research began with the German universities at the turn of the 20th century. Since that time, a number of educators have commented on the importance of knowledge acquisition among faculty, and increasingly, an importance on knowledge *creation* as well as acquisition (e.g., Barnett, 1992; Gell, 1992).

In the modern elite, research university, while the sacred trilogy of 'research, teaching and service' are all given strong administrative endorsement, most faculty are aware that the prevailing ideology is that it is the quantity and quality of one's scholarly research which will be the ultimate determinant of contract renewal, promotion and tenure. Moreover, many institutions are moving to recalibrate their annual review and compensation systems to reflect this emphasis, offering smaller teaching loads and lowered teaching expectations for strongly productive research faculty. As a result, most faculty evaluation systems have developed complex and sophisticated mechanisms for discerning and measuring research quantity, quality and impact, while 'satisficing' on measures of teaching effectiveness by treating anything more than 'bad' teaching ratings as fully acceptable evidence of teaching quality and impact.

The prevalence of this 'great person' or superstar approach to faculty selection and development (i.e., that one person is capable of being both an excellent teacher and researcher) across higher education cannot be underestimated. Indeed, several critics have suggested that the belief in the existence of, and search for, 'great person' faculty is reflective of ongoing discussion about the core values of higher education itself. Rowland (2000) conducted interviews with heads of university departments about their star researchers and teachers. The department heads characterized successful researchers as 'driven', 'self-motivated', 'confident', and 'someone who has a passion for something and wants to pursue it at all costs'. In contrast, successful teachers were described as 'open', 'concerned for students', 'caring', and 'carrying out their obligations with a sense of duty'. Rowland goes on to note (as cited in Badley, 2002):

Such qualities are more often associated with female stereotypes. It cannot be altogether coincidental that these representatives of a large male preserve of senior academics reflect a view of research (which has been the main criterion of their gaining seniority) in terms of mainly male qualities. There would seem to be no obvious epistemological basis for this view of knowledge and its production. Such a perspective is no doubt self-reinforcing of the male hierarchy that produces it. (Rowland, 2000, 16–17, quoted in Badley, 2002: 445)

While this view may be somewhat extreme – and Badley goes on to wax elegantly about the implications of the male/female characteristics and their literary and cultural significance – the questions remain. Is the search for 'great persons' – the 21st century's academic version of the 'war for talent' (Michaels, Handfield-Jones & Axelrod, 2001) – a meaningful search? Is there empirical support for the validity of the 'great person' model (cf. Fairweather, 2002, for one answer to this question)? Why have universities not pursued alternative staffing models for managing this talent problem?

When one questions the origins and validity of this 'great person' approach, one discovers that current day faculty and administration tend to embrace a set of underlying assumptions (not necessarily supported by more than anecdotal evidence) that can be grouped into three general categories: that research contributes to teaching, that teaching contributes to research, and that the two major role activities embrace a common underlying set of cardinal values that bind the two (cf. Hattie & Marsh, 1996, 2004). They agree that research should contribute to teaching for a number of reasons. Past research serves as the content base for what is taught. Active researchers will know this content base more thoroughly and understand its nuances. Lectures are the primary basis for transmitting this knowledge, and active researchers are more likely to incorporate the most recent research findings and debates into their teaching presentations. Moreover, active researchers are more enthusiastic and energized about their areas of research, and will communicate this excitement in their classroom performance. This excitement will generate interest among students, who see the instructor as more knowledgeable, credible and interesting than an instructor who is merely conveying the work of others.

Similarly, the prevailing wisdom is that that teaching should contribute to research. Effective teachers must be able to explain the 'big picture' of various topics and sub-fields in their discipline. As a result, preparing these explanations will help teachers understand the background and context of their research specialty, and perhaps relate it to topics and approaches that were previously seen as unrelated. Moreover, the process of describing this work to students, and fielding their questions and critiques often will help to sharpen new areas of inquiry, raise untested questions or suggest new methodologies. Enthusiastic engagement of the research issues by students stimulates and motivates the researcher toward new pursuits. For those faculty who are teaching outside their research area, teaching may

help to reframe existing areas of research or even help to formulate new research questions because of the challenges that may be presented from those outside the discipline.

Finally, the argument is that research and teaching activities are complementary because they embrace common academic values (cf. Braxton, 1996; Badley, 2002; Leslie, 2002). These values endorse the acquisition of knowledge for its own sake, seeking 'truth' through rationality and systematic investigation, and they argue that each reinforces the other by virtue of adherence to these values. Moreover, it is clear, they argue, that almost all strong teachers and strong researchers support the importance of both activities, and endorse the development of mechanisms to encourage and nurture strength in both areas.

However, critics (cf. Braxton, 1996) have noted that there is mounting evidence that the two activities can also be strongly incompatible. In fields where many of the interesting research problems have already been mined, researchers must focus on a very narrow set of problems, and discussing these with students may consume one class period at best. Meanwhile, as noted earlier, teaching demands may require the instructor to teach courses out of his immediate area of expertise, or broad survey courses that do not generate intellectual excitement for faculty or students. Time required for teaching activities (class preparation, grading, office hours) often directly competes with time necessary for research activities (writing, study preparation, data collection and analysis). This stress is often felt most strongly by younger faculty who have non-academic and family obligations that require strict time budgeting of their professional commitments. And when one examines the actual work required to design and conduct high quality research, the portfolio of activities is quite different from the actual work required to be a strong teacher; preparation activities are different, 'performance' of those activities are different, different personalities may

be required to excel at each activity, and totally different audiences must be satisfied to sustain and underwrite the critical work in each domain.

The fundamental belief – by academic administrators and many senior faculty leaders – that quality scholarship facilitates quality teaching – is being challenged from inside and outside the academic community. A chorus of prominent voices has charged that business education has minimal, if any, impact on student success or performance once they reach the job market, and that the majority of academic research is so particularized and divorced from practical realities that it adds little practical value (Pfeffer & Fong, 2002). Bennis & O'Toole (2005) charge that too much emphasis on research has led to schools designing curricular delivery mechanisms around paradigms consistent with conducting scientific research but inconsistent with delivering professional education, and, correlatively, abandoning the teaching mission to a portfolio of untenured clinical instructors while rewarding full-time faculty for sustained research productivity. Ghoshal (2005) went so far as to claim that in pursuit of academic credibility via rigorous research, theories of effective management have adopted a set of assumptions about human nature that provide intellectual justification for a class of behaviors that sour the corporate ethical climate (e.g., that increased attention to transaction costs and agency theory may have created an increased pressure on results at the expense of ethics, Ghoshal, 2005). Furthermore, business schools face a rapidly shifting demographic in terms of enrollment, fragmentation among providers, segmentation of markets, globalization, advances in delivery technology, a declining supply of doctorally qualified faculty, and increased importance of non-degree education (AACSB, 2002). Finally, at the broader institution level, Badley (2002) comments that research and teaching are headed toward 'divorce' in many institutions, leading to two different types (and classes) of institutions which emphasize one or the other,

but that inherently (with certain exceptions), teaching institutions are seen as inferior and underfunded. This trend, he claims, is leading to the conclusion that:

In effect, only the rich [top research universities] can afford to maintain a strong marital relationship between high class research and good quality teaching. For the rest, a divorce, if not actual, appears to be pending. (Badley, 2002: 446)

These criticisms and challenges require formulating effective strategic and operational responses that necessitate bringing the precise nature of the research-teaching nexus into sharp relief.

In this chapter, we will present and discuss in detail the tensions and compatibilities between faculty research and teaching activities.² The next section selectively reviews empirical research that questions whether productive researchers are, in fact, better teachers. (While there is no shortage of eloquent invective on this question, the focus on empirical studies both narrows the range of studies to be reviewed and applies sophisticated research methodology to this important question.) This review will lead us to expand the definition of what constitutes 'research' and 'scholarship', and we will draw heavily from Boyer's (1990) classification scheme to point out that there are other forms of scholarship beyond what is traditionally defined as 'research' in modern business schools. We then propose three major courses of action for the business school community: 1 A rich empirical examination of the relationship between traditional and non-traditional definitions of 'research excellence' and 'teaching excellence' among business school faculty; 2 A broadening of the definition of scholarship in business schools that entails full institutional support; and 3 The development and support of formal and informal recognition and reward systems for *both* highly skilled teachers and researchers, rather than continue to pursue a uniform model of faculty selection and promotion.

THE EMPIRICAL RELATIONSHIP BETWEEN RESEARCH AND TEACHING

The empirical relationship between research productivity and quality teaching is certainly a testable research proposition. Although no single effort has focused on this relationship in the management disciplines *per se* (see Arnold, 2008 in press for one exception in a college of economics), several excellent studies in the broader higher education literature have examined this relationship. It is beyond the purview of this chapter to thoroughly review the overlapping and often contradictory streams of this literature. Fortunately, Hattie & Marsh (1996, 2004; Marsh & Hattie, 2002) provided exhaustive and authoritative reviews and meta-analyses of this literature (see also Allen, 2006, for a more recent but less complete review).

Hattie & Marsh (1996) reviewed 58 empirical studies of the research-teaching relationship. In order to make sense of the possible explanations for various patterns of results, Hattie & Marsh posited three distinct classes of possible explanatory categories for the research–teaching relationship: those that argue for a negative relationship (i.e., that good researchers are not good teachers), those that argue for a positive relationship (i.e., that good researchers are also good teachers), and those that argue for no relationship (i.e., that strength in one domain is not directly related to strength in the other). These categories are reviewed below.

Three models fell within the category that argued for a possible negative relationship. The first is the *Scarcity Model*. The logic here is that research and teaching compete for three critical resources: time, energy and professional commitment. Not unlike many other managerial decision making models, the Scarcity Model assumes that faculty have limited and fixed resources (time and energy), and thus assumes that time, energy or commitment invested into either teaching or research largely comes at the expense of the other. The possible second negative relationship approach is the *Differential Personality Model*, which suggests that researchers and

teachers are fundamentally different kinds of personalities with different work preferences and styles (recall the Rowland quote, above); the personal qualities associated with excelling at research are different from those that require excellence at teaching. The third is the *Divergent Reward System Model*. This holds that different incentive contingencies exist for research and teaching. However, because research activity has gained higher status in many institutions, the reward systems are not necessarily ‘separate but equal.’ Instead, in many institutions, the research-oriented faculty are privileged by the formal reward system (e.g., annual compensation, tenure and promotion), including a reduction in their teaching responsibilities, whereas teaching faculty bear a greater teaching load (and perhaps reduced obligations to produce publishable research), but not necessarily equal compensation or stature.

Two primary models represent a possible positive relationship between research and teaching. The first is the *Conventional Wisdom Model*. The prevailing assumption among the professoriate is that there is an essential connection between excelling at research and teaching; that the content derived from the former is critical to sustaining excellence at the latter, and that the institution seeks to hire and reward those whose combined skill set represents the true ‘scholar-educator.’ *Prima facie* evidence to sustain the search for these ‘chosen few’ is provided by surveys that find that as many as 90 percent of faculty believe an active research program is necessary to be a good instructor (Halsey, 1992, cited in Hattie & Marsh, 1996). Predictably, though, the relationship is conceived to be unidirectional, not bidirectional. That is, the core belief is that strong research skills drive good teaching, but not necessarily the reverse. A good researcher will also make a good teacher, and therefore faculty selection should be driven by demonstrated research talents. The second model which might explain a positive relationship is the ‘G’ model, which argues that the fundamental constellation of personal abilities, interests and values

required for quality research is the same as that required for quality teaching. That constellation of approaches includes personal qualities and habits such as perseverance, dedication, discipline, imagination, originality, inventiveness, investigative inquisitiveness and critical analysis.

The last category, also containing three possible models, would posit that there is no special relationship between research and teaching. First, the *Different Enterprises Model* would hold that knowledge creation and generation, and knowledge dissemination and application, are fundamentally different activities that neither promote nor distract from one another. In an organizational analogy, one need not be involved in the formulation of strategy in order to execute the operational details it entails. Second, the *Unrelated Personality Model* would suggest that excellent researchers and strong teachers have uniquely different personality profiles; while there is some overlap between the qualities within each profile, the similarities are not necessarily tied to effectiveness in either domain. Finally, the third model, the *Bureaucratic Funding Model*, begins with the premise that research and teaching are divorced activities, and thus that they should be institutionally separated so as to encourage more research depth and release educational curriculum design from the research interests of faculty.

In an effort to distinguish the relative validity of these eight different models, Hattie & Marsh (1996) conducted a meta-analysis of the extant studies that met the following criteria: data were collected in universities or similar institutions of higher education, complex ratings of research and teaching activities were available, and the data were sufficient to derive correlations. Indices of research productivity mainly included the number of publications or overall productivity (a weighted composite measure), but citation counts, quality assessments of publication outlets, and grants were also used in some instances. Indices of teaching were predominantly student and peer evaluations, although a few studies also included self-ratings.

From the 58 published studies that met these criteria, Hattie & Marsh calculated 498 correlations between the research and teaching indicators. The resultant weighted average was a correlation of .06. The mean correlation between research and teaching was somewhat higher in liberal arts colleges as compared to major research universities, and somewhat higher in the social science disciplines as compared to the natural sciences or the humanities. They also reported that time spent on research is related to research productivity, but is not related to teaching quality. In contrast, actual time spent on teaching is not related to teaching quality, and is negatively related to research productivity. Further, results indicated that compared to non-researchers, good researchers were also well-prepared teachers and had strong presentation competencies, and that good researchers and good teachers were enthusiastic, employed broad topic coverage, were committed to teaching, and appeared more knowledgeable. However, as they noted in a follow-up article (2002):

The overall conclusion of a zero relationship was found across disciplines, various measures of research output (e.g., quality, productivity, citations), various measures of teaching quality (student evaluation, peer ratings), and different categories of university (liberal, research). Based on this review, we concluded that the common belief that research and teaching are inextricably entwined is an enduring myth. At best, research and teaching are very loosely coupled. (Marsh & Hattie, 2002: 606)

The studies that comprised Hattie & Marsh's meta-analysis (1996) and the follow-up review (2002) could be criticized on a host of methodological grounds. One predictable concern is the measurement of teaching quality. Although student evaluations are important, they are only a proxy for actual student learning, which is the outcome of ultimate interest. Further, measuring research mainly through indices of productivity, like a number of publications, is a fairly blunt representation of quality. In addition, many of the studies used to prepare the meta-analysis

did not use measures of either teaching or research effectiveness that allowed them to be included because of unique qualities of data aggregation or analysis. But be that as it may, the fact remains that the picture is bleak for those who insist on an unambiguous positive or negative connection between research and teaching, or even more poignantly, a directional relationship. That the traditional justification for professorial duties might simply be erroneous deserves the most serious attention.

The results of the study created significant discomfort in the academic community, largely because the results challenged the deeply held beliefs of many academics, that a positive, mutually supportive relationship between the areas of professional practice exist (cf. Neumann, 1992; Jensen, 1988), and that the two sets of practices could not even be effectively separated (Braxton, 1996; Gray, Diamond & Adam, 1996). Many also questioned whether the 1996 meta-analysis was adequate to convincingly embrace the conclusion of 'no relationship', because that analysis: (a) drew from data collected across many institutions; (b) drew data from studies that did not allow the researchers to test for more complex relationships between research and teaching activities (i.e., possible mediators and moderators of the relationship); and (c) that while the relationship may be close to zero as determined by a meta-analysis of a number of studies, a stronger result might be obtained if a more complex, single-sample data set were collected from a research institution.

In response to this critique, and also to provide help to academics and university administrators who want to emphasize or shape those elements that might make the relationship more positive, Marsh (1997) explored the impact of the earlier findings and proposed an agenda for future hypothesis testing. Marsh & Hattie (2002) set out to test elements of this more defensible and elaborate agenda of the relationship between the two activities. Their intent was twofold: to examine the effects of potential mediators and moderators of the relationship between teaching and research which might explain

why the relationship between the two was not more visible (analyses which were not possible in the 1996 study because of the zero-order correlation between the major variables) (Baron & Kenny, 1986), and to examine the cultures and contexts of different departments and universities to determine whether certain academic units can create a more positive relationship because of the structural or environmental characteristics of those units. They also indicated that they hoped to take advantage of advances in statistical research methodologies, such as structural equation modeling, that would allow more sophisticated analyses of data at the instructor, department, faculty and institution levels of analysis. With regard to mediators and moderators, Marsh & Hattie chose to focus on several possible hypothesized (predicted) mediated or moderated relationships that could be grouped into two categories: background variables of the specific faculty who bring differential talents to teaching and/or research, and resources committed to each of these processes. The nine proposed mediators and moderators were:

- 1 *Perceived self-efficacy at teaching or research.* Faculty who *believe* they are skilled at either activity might be likely to be more motivated to complete the required tasks, to spend more time and resources on activities related to each activity, and hence to be better at either activity.
- 2 *Satisfaction with teaching or research activities.* The more satisfaction faculty derive from completing each activity, the more time, energy and motivation they might be likely to invest.
- 3 *Personal goals.* The higher the sense of priority for each activity, the more time they might invest in it.
- 4 *Extrinsic rewards for teaching or research.* The greater the extrinsic rewards for an activity (recognition, salary, promotion), the more the activity might be pursued.
- 5 *Constraints to teaching and research.* The greater the constraints to engaging in an activity (difficulty in obtaining adequate time, materials, funding, etc.), the lower the probability that they might be likely to engage in the activity.
- 6 *Beliefs about the nexus between research and teaching.* A faculty member's beliefs about the relationship between the two activities might, in effect, create self-fulfilling beliefs for proving

either a positive or a negative relationship. Those who believe that teaching and research are compatible would probably pursue these activities in ways that are mutually reinforcing and supportive, while those who believe they are incompatible may be very conscious about the lack of compatibility and clearly favor one over the other.

- 7 *Departmental ethos for teaching and research.* These departmental characteristics may include beliefs about the teaching–research nexus at the department level, or beliefs about the greater importance of teaching or research which lead to more informal rewards and recognition for excellent performance in either activity.
- 8 *Time actually spent on teaching and research activities.* In an earlier study that developed the analytical model, Marsh (1987) proposed that time actually spent on research would be negatively related to time spent on teaching. This finding was actually confirmed by Hattie & Marsh (1996), reporting that time spent on research was seen as more critical to career success, and there was a weaker positive correlation between time spent on teaching and improved teaching effectiveness, compared to the stronger positive correlation between time spent on research and improved research effectiveness. In short, incremental improvements in teaching seem to be achievable with less direct time investment per unit time, compared to incremental improvements in research per unit time. Time invested may also be a proxy for the different levels of interest and motivation noted above. The authors note a number of studies in which time spent on either activity is correlated with time spent on the other, and to overall measures of teaching and research productivity, etc. As they note:

the overall message appears to be that time on research is related to research productivity but not to teaching effectiveness, whereas time on teaching is not related to teaching effectiveness but may be negatively related to research productivity. ... In summary, those who spend more time on research do have higher research outcomes, but those who spend more time on teaching do not seem to be more effective teachers. There seems to be a non-reciprocal pattern of relations in that time on research has more critical outcomes than time on teaching. (Marsh & Hattie, 2002: 613)

- 9 *Activity in teaching and research.* Finally, while the actual time spent on either activity appears to

yield different results, there may be a relationship between specific activities spent in teaching (e.g., class preparation, preparation of course materials, grading, meeting with students, etc.) and teaching effectiveness, and between specific activities spent in conducting research (grant writing, student supervision, editorial duties, data collection and analysis, presentation to meetings, etc.) and research effectiveness.

To investigate these relationships, Marsh & Hattie collected new data from 182 faculty at a research university, spread across 20 academic departments. Faculty reported that on the average, they spent a total of 48.3 hours working each week, of which 46 percent was on teaching, 28 percent on research and 27 percent on ‘administration’ (service, record keeping, etc). Teaching effectiveness was assessed with student evaluations using a standard university form, plus assessment of other instructor practices. Research productivity was assessed by faculty publication activity, and by the university’s assessment of departmental-level research strength and research funding. To access the proposed mediators and moderators, a separate measure completed by each faculty member assessed time spent on research and teaching activities, internal and external ‘motivations’ for working on each type of activity, satisfaction with research and teaching performance, and personal assessment of one’s own effectiveness as a teacher and researcher. They also aggregated the teaching and research data into two major indices: teaching effectiveness (overall teacher rating, overall course value, evaluation of teaching materials and teacher presentations), and research effectiveness (number of published journal articles, conference papers, book chapters, edited books and authored books).

The results of these analyses were dramatic. First, the correlation between overall teaching effectiveness and total number of publications was .03; there was no strong correlation between any of the component elements that comprised the teaching effectiveness rating or the research publication index. When the elements of the ‘teaching effectiveness’

and 'research productivity' measures were combined into an overall factor score for each, the correlation between the factor scores was .02.

Second, they explored whether the teaching–research relationship might differ as a function of the type of academic department. But when the two overall indicators of teaching and research were assessed at the department level, variance at this level was not statistically significant for teaching effectiveness, research publications, or for the teaching–research relationship. Moreover, differences in 'department ethos' (culture) that might be seen as supporting a stronger emphasis on research or teaching productivity had little or no relationship to the teaching–research correlation.

Third, there appeared to be strong support for the hypothesis that time spent on research and teaching was negatively related, but no indication that the time spent on either activity had any significant impact on teaching effectiveness or research productivity.

Fourth, self-perceived ability at teaching or at research did relate to actual effectiveness at either one, but the perceived ability ratings were not significantly correlated with each other. The self-perceived rating of teaching ability was the only rating significantly related to actual teaching effectiveness. Stronger emphasis on research goals and research outcomes were negatively related to teaching outcomes.

Fifth, research publications were more consistently related to self-ratings of research ability, personal research goals, time spent on research, and belief in the 'research nexus' (the belief that research facilitates teaching). Perceived research ability appeared to drive many of these high ratings, and these ratings were negatively correlated with teaching variables.

Finally, the authors tested the possible moderator variables, particularly the individual-level 'nexus' variables. Marsh & Hattie (2002) predicted that the more a faculty member believes research contributes to teaching or that teaching contributes to research, the stronger the relationship should

be between these variables and actual teaching effectiveness and research productivity. The authors tested the teaching \times research interaction against 20 potential moderating variables of teaching effectiveness and research productivity; none of the relationships was statistically significant. Moreover, the teaching \times research interaction was not significant for either of the nexus variables, and in fact, the direction of the non-significant interaction was negative (betas = -0.17 and -0.10); to quote the authors, 'the teaching–research relation is actually more negative for those who have the more positive beliefs that good teaching contributes to good research' (Marsh & Hattie, 2002: 626). The interaction effect was positive for academics who spend a greater proportion of their time teaching, suggesting that those who teach more may be more able to devise strategies to allow teaching to contribute to their research productivity.

The collective impact of the two Hattie & Marsh studies indicates a robust set of findings that suggest no direct *or* mediated/moderated relationship between teaching effectiveness and research productivity. Moreover, despite several literature searches, we found no significant comprehensive research since the Hattie & Marsh studies to challenge their findings. More distressingly, we found only one study examining this relationship in a professional school environment, including business schools, to examine whether or not these findings apply to professional schools versus arts and sciences disciplines. Arnold (2008, in press), studying undergraduate and graduate-level courses in a school of economics, found that there was a negative relationship between research and teaching in the first two years of a bachelor's degree program, but the relationship was positive for the later two years and for graduate courses. Arnold suggests that the results may derive from the tendency to assign more senior faculty, who are by definition more productive researchers, to upper division and graduate courses, and that these faculty may be able to integrate their research into these classes, and gain research ideas from

their teaching. This study, and others which might be developed in professional schools, might be in a better position to address the hypothesis that research and teaching activities in a professional school might be more synergistic than in arts and sciences. We suggest, however, that by broadening the conception of what constitutes 'legitimate academic scholarship', business schools can fashion a robust and meaningful relationship between research and teaching activities and the reward systems that motivate them.

BROADENING THE CONCEPT OF SCHOLARSHIP

In his seminal work, Ernest Boyer (1990), President of the Carnegie Foundation for the Advancement of Teaching, lamented the shift in the professoriate from a balanced conception of research, teaching and service, to one that emphasizes research and publication at the expense of the other two. Tracing the evolution of the conception of scholarship to the current day, he observes that research is firmly entrenched at the top of the hierarchy of academic functions, and teaching is understood as the communication of that research to others. Boyer credits this shift to a narrowing definition of scholarship among the nation's elite academic institutions, and a remarkable tendency for all leading research universities to embrace this narrow view.

In an effort to move beyond this constricted conception, Boyer argues that universities must rethink what it means to be a scholar and embrace a more expansive definition of the construct. Rather than viewing scholarship as merely 'research,' Boyer offers four forms of scholarship: discovery, integration, application, and teaching. We shall review the basic definition of each, and then elaborate on how they are being integrated into academic institutions and their measurement, promotion and reward systems.

The *scholarship of discovery* is probably the most familiar, as it is generally synonymous with what current academics describe as 'research'. Pursuit of this form of scholarship

is generally considered to be the essence of the professional academy: the freedom to think about problems from unrestricted, new and different perspectives, the ability to pursue knowledge for its own sake, and the capacity to investigate ideas without constraint on the type of questions one can ask. The support and growth of this form of scholarship has made premier, research universities – particularly in the United States – world leaders in the generation of new knowledge and insight about the human condition. Numerous Nobel Prize winners, literary stars and patent holders populate the faculties of these first class universities. They contribute both to the intellectual vibrancy of academic culture and to a stream of financial support that cyclically sustains high-caliber research and holds tuition at an affordable level. The work performed by these academics is generally what is most highly recognized and rewarded through the awarding of tenure, promotion and compensation.

The *scholarship of integration* emphasizes the need to '... make connections across the disciplines' (p. 18), to extend knowledge obtained through discovery to comparable knowledge derived from other disciplines and paradigms. Such work is often called 'interdisciplinary research' in that the scholarship of integration is about discovering the boundaries of a particular field or tradition and then either to relate them to comparable ideas and theories in other traditions or to put them in larger perspective to infuse broader meaning. Boyer reports the results of a survey across faculty at many different types of academic institutions: 85 percent of faculty at research institutions believed that multidisciplinary work had significant value and importance and give research streams within a discipline a larger meaning and context (yet considerably fewer actually attempt it), and it tends to be somewhat less rewarded in promotion and tenure considerations.

The *scholarship of application* is the third form of scholarship. Here the scholar inquires about the ways that research findings can be applied to important practical or social problems. Not only is this form of scholarship

concerned with how to direct the consequences or outcomes of research to specific issues, but the reverse is equally valid – that is, how can practical or social problems be used to dictate and direct the basic research agenda. Boyer draws a sharp distinction between ‘citizenship’ activities – participation in the ongoing governance and management of the university through committee work and administration – and genuine pursuit of the scholarship of application. This third form of scholarship is most visible through efforts to apply the findings from discovery and integration to significant practical or social problems, and to create and sustain the agenda for future discovery and integration that is informed from this application.

The scholarship of application is very similar to the process of action learning (Revans, 1980; Raelin, 2000). In action learning, participants in a learning process study their own actions and experience and use it to improve their performance. This process is usually done in ‘action learning sets’, small groups which discuss and review what they have done and then use that learning to guide future action. Action learning is a process of combining traditional knowledge (derived through books, lectures and presentations) with the constant use of questions about application in order to create new insights, ideas, approaches, refinements, etc. The approach has proved to be very effective in learning complex tasks, and for working in environments where constant improvement, refinement and fine tuning are required to improve individual and team performance.

Finally, Boyer’s fourth form of scholarship is the *scholarship of teaching*, which emphasizes the dissemination of knowledge derived through discovery, integration and application. As Boyer indicates, teaching both educates and entices future scholars. It must start with intellectually engaged, well-read faculty. They must understand their field and its nuances, and they must be capable of finding creative and engaging ways of communicating complex knowledge to others. Effective teaching is a communicative

and communal act. Good teachers must be intellectually engaged and active learners. But they also must be able to transform and extend their own learning so that they are able to stimulate others to think, understand and explore. These activities may be directed at a wide variety of audiences – to those who will become practitioners, purveyors of the four forms of scholarship, or who simply seek to become wiser and more broadly educated. Effectively engaging in this scholarship requires more than effective transmission of knowledge. As Boyer emphasizes, faculty must also actively participate in the examination and evaluation of those knowledge dissemination activities so as to improve the very practice of the scholarship of teaching.

Over the past quarter-century, the scholarship of teaching and learning has received significant attention. Barnett (2000) & Badley (2002) have nicely elaborated the complexity of the role responsibilities for teaching and research, and created a justification for each as different forms of inquiry. In the business school environments, Bilimoria & Fukami (2002) have traced some of the origins of the scholarship of teaching and learning movement to the creation of the Organizational Behavior Teaching Society in the mid-1970s, and the subsequent creation of the *Journal of Management Education*. Since that time, the Academy of Management professional organization has devoted significantly more program time to teaching and learning activities. Numerous other new teaching and pedagogy journals have been created in related business fields (accounting, international business, MIS, marketing and public administration), and new scholarly books, monographs, personal portraits of teaching, and other teaching-related scholarship have appeared. Finally, critics of the adequacy and effectiveness of management education – beginning with Porter and McKibbin (1988) & continuing to the current day (Ghoshal, 2005; Bennis & O’Toole, 2005); AACSB, 2002) have challenged whether business schools have ‘lost their way’ by over-emphasizing

research and under-emphasizing teaching. These critiques have led to several important innovations. First, many business schools are now encouraging and rewarding teaching and 'knowledge dissemination' activities as a regular part of faculty performance evaluation and management. Second, management educators are treating the 'classroom as an organization', applying research-derived best practices to the faculty's management of the classroom environment. These practices include processes of participative management, reward and punishment practices, teamwork, addressing cultural diversity, and individual differences in learning styles. Relatedly, experienced researchers are providing instruction to teaching faculty on ways to use the classroom environment as a site for data collection and hypothesis testing in areas such as negotiation and conflict management, teamwork, and learning styles (Loyd, Kern & Thompson, 2005). Finally, the number of articles on teaching practice, technology, methods and evaluation of impact has increased significantly, as has the theoretical and empirical rigor with which these topics are addressed. Bilimoria & Fukami (2002) point to important trends in the continued development of scholarship in this area in the management domain, and to address what must be done at the department and institution level to support these developments (cf. Fukami, 2004).

RECOMMENDATIONS

Ideally, quality acquisition and generation of knowledge ('research') is a necessary partner to quality dissemination of knowledge ('teaching'). The entire educational endeavor is based on the premise that to develop and expand what is known about a domain should go hand-in-hand with how to disseminate that knowledge. Knowledge must be communicated to students in a fashion that improves their ability to understand and act within a domain; in turn, students, practitioners and their teachers must ask new questions about effective action, questions which drive

future research. Ideally, this intimate and intrinsic reciprocity is indisputable, and represents the full cycle of knowledge creation, dissemination and application. As we noted throughout this chapter, however, the university began with a dominantly teaching mission, expanded to incorporate research, but is currently shifting to a heavier focus on research. This has been accompanied by a second tendency, to select faculty whose expertise is in both sets of skills. However, there are many alternative ways for the two to feed each other synergistically without them having to co-occur *within* individual faculty. As we will note, the opportunities for variation and innovation are more dramatic when we look within and across academic departments, schools and universities.

In this chapter, we examined the empirical research on the relationship between research and teaching in the broad university context. We noted that the available analyses of this data suggest that the relationship is extremely weak. At the same time, critics of business school's commitment to its educational mission are calling for fundamental transformations in the emphasis given to teaching and research activities. The combined effect of these two factors suggest that it is hard to defend the notion that knowledge creation – in the exclusive form of the scholarship of discovery – should be the dominant model encouraged and rewarded by all business schools. We believe that it is highly problematic for business schools with varying institutional characteristics and market demands to *all* value research productivity above other forms of scholarship. In this final section, we describe several ways the business disciplines can move forward around this debate.

First, the existing research on the relationship between traditional calibrations of research and teaching indicates that the two dimensions are more independent rather than correlated, much less directionally or causally related. As Hattie & Marsh (2004) note, the correlation is fundamentally zero, indicating that for some faculty, research and teaching are positively correlated, for

some the two are negatively correlated, and for some there is no correlation. Moreover, not all faculty are productive in either activity. Fairweather (2002) examined faculty productivity of over 25,000 faculty across 817 institutions that differed across the different classifications of universities identified by the Carnegie Commission (1987): research, doctoral-granting, comprehensive colleges and universities, liberal arts colleges, etc. They note that about 46 percent of all faculty across these designations are productive researchers, and 54 percent are productive teachers, ranging from over 50 percent at research universities to 39 percent at liberal arts colleges.³ In order to examine the prevalence of the 'great person' model, Fairweather examined the percentages of faculty who met the standards for both high productivity in research and teaching across institutional type. On average, about 22 percent of all faculty met the criteria for high productivity in both areas. He then added a second teaching criterion: that the faculty member used more collaborative instructional practices (i.e., group discussion class presentations, apprenticeships, internships, fieldwork, role playing, simulations, group projects or cooperative learning experiences). For this second group, the number of those highly productive in both drops to about 6 percent who meet this criterion. Faculty members in liberal arts were more likely to make this designation. Slightly more men made the first criterion (high productivity in both); slightly more women made the second group (high in both and using collaborative instructional practices).

Given the overall statistics on the relationship between teaching and research activity, and the small number of faculty in the more prestigious universities who meet the 'great person' criteria, it is not clear why more institutions do not espouse a broader view of scholarship in faculty hiring, performance review, tenure and promotion. Boyer's framework offers those involved in management education – scholars, educators and administrators alike – an opportunity to expand, recognize, and legitimate different forms of scholarship. Moreover, as we note below, institutions are

exploring ways to create the infrastructure, reward and performance evaluation systems to support this differentiation. Nevertheless, as Boyer (and others cited here) lament, the scholarship of discovery has become the most privileged criteria for allocating formal and informal internal rewards (e.g., promotion, compensation, release time, chaired professorships and discretionary budgets) and external esteem (e.g., 'Fellow' designations in major associations, keynote address invitations, editorships of major journals; cf. Gómez-Mejía & Balkin, 1992).

We urge that the research evidence on the relationship between research and teaching drive a re-examination of this privilege system, and particularly in business schools. If good teaching is as instrumental to business school success as research, more should be known about how to select and nurture both sets of skills. Good researchers can be taught to be master teachers (cf. Jaffe, 2004), and to link research to teaching (cf. Healey, 2005). Further, business schools may have to broaden their understanding of what the scholarship of discovery means in the context of business research. Most professional schools – law, education, medicine – produce research that focuses on applied problems. However, the trend in many business schools – particularly high status research universities – has moved away from applied problems of the profession and 'backed into' the creation of new knowledge in the core disciplines from which that knowledge was drawn. Traditionally, fields like management and marketing drew basic research from psychology, sociology, and economics to understand business problems. But increasingly, these fields have set out to directly compete with the basic social sciences disciplines, studying core problems that may or may not directly relate to a recognized business issue. In fact such 'basic' research is now seen as more prestigious and critical to first-class scholarship than are studies oriented toward real-world problems. A report by the British Center for Excellence in Management and Leadership described this as the difference between

Mode 1 and Mode 2 research (CEMM, 2001). Mode 1 research emphasizes academic understanding for its own sake. Its key consumer is its own kind—often a very small academic community that shares the same interest in an increasingly narrow definition of research problems. Mode 2 research, in contrast, emphasizes knowledge produced for the purpose of application. Explicitly designed for the practitioner, it requires a constant dialogue between scientist and manager to assure understanding of the problem and application of solutions (CEMM, 2001). Bennis & O’Toole (2005) bemoan the significant drift toward Mode 1 research, suggesting that it is a core reason to explain why tenured faculty are moving away from engaging the business world. The implications are clear both for a decreased emphasis on knowledge dissemination and for an increasingly widening gap between knowledge creation and its application at the individual faculty level.

One might argue that the more the focus of scholarly business research turns toward the core disciplines and away from a firm grounding in applied business problems, the less that research also directly informs the process of instructing students (the business practitioner-to-be). Given that we found no serious scholarship examining the research–teaching relationship in the domain of management education, we argue that these implications should drive a blue-ribbon empirical investigation into this relationship—within and across management disciplines and types of business schools. We also argue that many institutions might choose to broaden their institutional scholarship so as to challenge the pre-eminence of basic theory scholarship, and to more visibly value and reward applied scholarship.

Second, research productivity requires a critical mass of faculty who are well trained in scientific conceptualization and execution. Thus, the institution must commit to supplying doctoral students or research assistants, attracting grants and independent funding, and affording release time for junior faculty and highly productive scholars. Top research

universities have these resources and use them to cultivate a culture that emphasizes the scholarship of discovery as a dominant criterion for faculty reward and promotion. However, it is particularly remarkable that such pressures for faculty research productivity inhere in institutions that lack a strong research ethos or the resources to attract, support and nurture a research faculty. In response to such confusion, professional associations and accrediting bodies should reaffirm a broader standard for what is recognized and rewarded, consistent with the Boyer model. The scholarships of integration, application and pedagogy are equally valid forms of inquiry. Because of their varied orientations toward breadth, practice and delivery respectively, this variety may provide mechanisms for some institutions to define excellence in their mission in a manner that does not unduly or maladaptively privilege the scholarship of discovery. Several mechanisms can be pursued here:

Research funding. Institutions should not necessarily be required to support research endeavors out of their own funds. In Europe, and increasingly in the U.S., research is funded by industry and non-government organizations rather than by government or university-based grants. Although business academics often see such funding as ‘tainted,’ this perception is not shared by colleagues in other professions such as medicine or engineering. These funding sources might be more likely to be ‘relevant’ and applied forms of business research.

Subject populations. The increasingly diverse nature of the business student population (undergraduate, MBA, Executive Masters, continuing education, etc.) creates a readily available population for participants in behavioral science research and organizational entry for the functional area disciplines. One notable study provided excellent guidance for how teaching venues can be employed as valuable sites for hypothesis generation and testing (Loyd, Kern & Thompson, 2005). It suggests that classroom research has had a long and honorable tradition, but also presents unique methodological

considerations for researchers – ones that can be managed in a way to make the classroom a fruitful arena for research.

Training and culture change. Teachers can not only use classrooms as data collection environments, but to be more sophisticated in the way that they extend research into the classroom by helping students learn how to do some or all of the following: define an issue, conduct a literature review, find and draw insights from the literature, propose a hypothesis, collect data, analyze the data, draw conclusions and make a presentation to peers, either individually or in groups (cf. Zamorski, 2002).

Third, we explored the veracity of the prevailing assumption in many leading research universities – that the excellent researcher and the teacher must be one and the same person. And we noted that at least one study (Fairweather, 2002) suggested that only 22 percent of faculty met the standard when loosely defined, and that the number dropped to 6 percent when he applied a more rigorous definition of ‘teaching productivity’. (Since his study did NOT incorporate student evaluations of teaching effectiveness as a measure of teaching productivity, one might expect that this percentage would drop even further if that criterion were incorporated in the index.) Yet many of the institution’s leading business schools are committed to this ‘superstar’ theory of promotion and tenure – ideally, research *and* teaching excellence must be embodied in the same individual, and that knowledge creation should necessarily be carried out by the same person who is responsible for knowledge dissemination. As previously asserted, quality education must be linked to quality research, but there is no reason to assume that active researchers have sole custody of either the knowledge or the delivery skills most appropriate and relevant for undergraduate, masters, doctoral or executive student constituencies. As researchers naturally and progressively focus their studies to gain greater depth, they might sacrifice the breadth that would place that knowledge into a context more conducive to learning. Thus, a more valid proposition would be that active

discovery scholars may not be better teachers, but those who are actively engaged in one or more of Boyer’s forms of scholarship, or employ the collaborative teaching practices described by Fairweather (2002), are more likely to bring a critical, rigorous research mind-frame to the classroom and are better teachers .

The prospect that research and teaching expertise must not necessarily reside in the same person proffers both opportunities and problems. A given school might appoint, recognize and reward faculty with differential responsibilities for creating and disseminating knowledge. Excellence in either or both areas would be rewarded with equally esteemed and valued senior professor endowed chairs, tenured status, and significant discretionary funds and perquisites. This approach would allow those with increased research responsibilities to devote their time and talent to top-quality research, relatively unencumbered, whereas the out-of-class activities of those with increased teaching responsibilities would focus around staying abreast of relevant literature and developing innovative instructional courses and programs. This portfolio model would, if properly managed, create a balanced human resource infrastructure capable of addressing an array of institutional missions. However, the success of this portfolio approach requires a supportive institutional culture—at both formal and informal levels. Research and teaching faculty must enjoy mutual respect and admiration for differential contributions as critical to overall institutional advancement and success. If this condition were met, the knowledge transfer between those pursuing the scholarships of discovery, application and pedagogy would be remarkably productive. In contrast, the most obvious potential pitfall of this arrangement would be the unintentional creation of a ‘caste’ system where one designation of faculty is perceived as superior to the other. This situation already exists in many institutions that devalue teaching contributions or have subcontracted the major instructional mission to instructors whose titles, compensation and

voice speak volumes to a 'separate and unequal' faculty culture.

Lastly, it goes without saying that pursuit of this approach is going to require institutions to become significantly more sophisticated at evaluating teaching capability and rewarding its excellence. Faculty are quite skilled in evaluating research quantity and quality, but complex approaches for evaluating and developing teaching have lagged. Most institutions use quantitative student evaluations. A fewer number have augmented ratings with qualitative comments from student written evaluations, student focus groups, and periodic faculty observation. Fewer still endorse the development of teaching portfolios or have broadened their definitions of teaching excellence to recognize more complete 'knowledge dissemination' activities (cf. Lucal, Albers, Ballantine, Burmeister-May, Chin, Dettmer & Larson, 2003 for a review in the field of sociology). For institutions to improve the respect high quality teaching deserves, teaching practices must be subject to peer review, and with the same degree of rigor as we currently review research grants and publications (see Van Fleet & Peterson, 2005 for one paradigm). Thus, institutions would recognize the development of new instructional materials and approaches, textbooks, simulations and authorship of articles on teaching as valid and significant contributions. Another standard for teaching excellence that has clearly lagged is to develop mechanisms for evaluating whether a faculty member's teaching materials are current and contemporary. Many administrators fear that some effective teachers may not have updated their lecture notes or readings packets in 20 years. While an experienced executive MBA student might recognize this immediately, a naive undergraduate may not. Reading, summarizing or re-interpreting current research literature in any area enhances the likelihood that teaching materials are current. Although currency may not be a concern for the active researcher who is typically reading the journals and summarizing contemporary knowledge, further work is needed to assure that these standards are met for

strong teachers. Third, faculty compensation systems may also have to be realigned such that excellent teachers are eligible for the same level of salary increase as excellent researchers. At least one recent study (Fairweather, 2005) shows that spending more hours teaching leads to lower base salaries for faculty in research, doctoral-granting and comprehensive universities. Only teaching of graduate students saw any improvement in their pay, and the use of the more collaborative teaching techniques had little impact on pay. Developing and refining these standards becomes even more critical as many institutions turn to an increasing number of part-time and clinical faculty to bear the major burden of an institution's instructional load, since comparable criteria should be applied to both full-time and part-time faculty. Finally, at the department and institution levels, faculty leaders (department chairs and deans) must work to transform the cultures within these units to support excellence in both domains. One study has shown that when there is strong congruence between individual values and the organizational priorities to support research or teaching, faculty were significantly more satisfied and productive than when they experienced incongruence (Wright, 2005).

SUMMARY

The dominant paradigm in the faculty recognition and reward systems of most business schools is rooted in three assumptions: 1 Institutional excellence is a result of research productivity; 2 Encouraging and rewarding faculty research will yield permanent faculty who are also quality educators committed to the institution; and 3 All business schools must follow this model if they wish to improve. This paper questions these assumptions in several ways. First, the available literature suggests that a meaningful correlation or directional relationship between research excellence and teaching excellence cannot be isolated. We call on the management education community to conduct serious empirical research to explore these relationships, given the multiple

demands on faculty and their institutions for increased accountability to students, their professions, their institutions and the business community. Second, faculty scholarship can be conceptualized more broadly than traditional creation of new knowledge, and it is possible to select, evaluate and reward faculty based on broader definitions of productive and contributing scholarly performance. This broadening will require improved processes to calibrate different types of scholarship, as well as by enhancing the reward and recognition to those who may excel at teaching excellence comparable to those who excel at traditional research. Third, many institutions that define the scholarship of discovery as the primary criterion for faculty performance do not have the resources to attract, nurture or support this activity. We suggest several possible alternatives for these institutions. These institutions should consider a faculty incentive and reward system which recognizes multiple forms of scholarship, and seeks to create a culture that enables rich co-existence, exchange and debate among them, thus better serving a variety of important stakeholders.

NOTES

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2 We will NOT examine teaching effectiveness, *per se*, or whether students can effectively apply the knowledge they obtain in business schools. However, this is an important focus for both academic institutions and their accrediting agencies, as accreditation practice moves toward requiring the assessment of outcomes of various educational programs and practices.

3 Research productivity was defined as the number of refereed publications during the previous two-years, and highly productive was defined as someone who exceeded the median number of teaching hours for the relevant program area and institutional type over a two-year period. Highly productive teachers

were designated as those who exceeded the relevant median in classroom contact hours, independent studies or dissertation committees.

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