

## **Changing Our Brains: Transforming a Traditional View of Scholarship and Teaching**

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### **Abstract**

The purpose of this essay is to capture, in its earliest stages, the influence that formal recognition of Boyer's multiple domains of scholarship within faculty evaluation standards had on a select group of colleagues within a disciplinary diverse academic unit at a mid-sized, comprehensive university. A process is described whereby the combination of a book discussion group, a newly approved faculty contract recognizing Boyer's multiple domains, and a genuine commitment from a disciplinary diverse group of colleagues to the academic mission of the unit, resulted in a transformation in attitudes toward scholarship and teaching. Scholarship of teaching and learning was viewed as the key element leading to the formation of a team approach to a scholarship of teaching and learning project within a group that had traditionally pursued research separate from instruction, and individually rather than collectively.

**Key Words:** scholarship of teaching and learning, multiple domains of scholarship, disciplinary diversity, faculty contract, book club, neural networks

### **Introduction**

Challenges facing balanced engagement across areas of teaching, scholarship and service are common to all institutions of higher education. One reads no further than the second paragraph of the preface in Boyer's ground-breaking work, *Scholarship Reconsidered: Priorities of the Professoriate* (1990), before encountering the issue of faculty time constraints, where he stated: "At the very heart of the current debate – the single concern around which all others pivot – is the issue of faculty time" (Boyer, 1990, p. xi). It is this issue of time, from a faculty perspective in finding balance across professional duties, and from a student perspective in having time to process information in a way that results in deeper learning, that connects Boyer's foundational insight to the work by James Zull (2002) which inspired this initial foray into the scholarship of teaching and learning.

### **Time and Balance**

The challenges of professional balance are perhaps most keenly observed at institutions with largely undergraduate educational missions. Boyer noted quite directly that "the comprehensive college or university, perhaps more than any other, can benefit most from

a redefinition of scholarship. Many of these institutions – offering a broad range of baccalaureate and masters level programs – are having a difficult time sorting out priorities” (Boyer, 1990, p. 61). Faculty members may find themselves in academic units where they are single representatives of a particular educational sub-discipline, but are also asked to cover instructional areas outside their respective academic preparation areas. Faculty involvement in institutional service, such as faculty representation in structures of shared governance, faculty and administrative search committees, curriculum development and review committees, strategic planning and accreditation review teams, and the like, is equal to that at larger institutions. With fewer faculty to staff the myriad of positions resulting from these normal institutional needs, however, there exists an economy of scale in terms of personnel resources that does not favor the small to mid-sized, comprehensive university. Faculty instructional loads reflective of an undergraduate mission are not only typically greater than at a research institution, but faculty may be less willing to seek course release for scholarly pursuits, as tenure track faculty working directly with undergraduate students is often an important part of institutional identity for the smaller institution.

Though noted by Boyer in the 1990 work, examples of the currency of these constraints, and various institutional approaches to addressing the time issue, are apparent in the current compendium of successful practices published by the Council on Undergraduate Research (CUR) with respect to implementing undergraduate programs that involve greater levels of faculty-student engagement (Karukstis & Elgren (Eds.), 2007). Addressed are the time challenges posed by faculty committee work (Rueckert, 2007), and variations in methods of addressing the faculty time needed for more individual, in-depth mentoring of undergraduate students through flexible teaching load formulas (Wettack, 2007).

Another theme pervasive throughout the CUR compendium is the need for building scholarly teams, both within and among faculty and students. The value and efficiency of the team approach to both research and learning is by no means a novel approach, but presents a further challenge within institutional structures that tend to be designed for individuals to function separately. This is especially apparent when examining the reliance on part-time and/or non-tenure track faculty for instructional needs, often a necessity due to budgetary constraints at any size institution. These faculty members may or may not have a role in the delivery of the service elements that keep an institution and its programs moving forward, and may or may not choose or be required to engage in scholarly activities. The power of collaboration may often go unrealized within a faculty with diverse institutional responsibilities, with true teams typically developed for only the most pressing needs, often of an institutional service nature (e.g. faculty searches, accreditation, strategic planning).

It is the authors’ observation, however, that there exists a desire among all faculty ranks to promote scholarly collaboration that can have direct benefit to the varied roles of the individual faculty member, and the varied services they provide to students. Lyall (2006) noted that non-tenure track faculty often reach more students and have the earliest contact with freshman, and possess indispensable insight into successful classroom practices. As such, one of her key recommendations is to “find ways to integrate the work of the growing number of non-tenure track teachers into the work of the academy” (Lyall, 2006, p. 8).

In examining our own academic unit we find not only a breadth of expertise, but a breadth of service and scholarly responsibilities representative of all of that noted above. A common theme of discussion when colleagues come together is that of priorities, the challenges of time, and the search for personal and professional balance. It is perhaps the nature of academicians to postulate on the root cause of the aforementioned challenges. Such a

discussion, however, often borders on, and can easily descend into, a cycle of complaint, characterized by expending limited reserves of time and energy on the enumeration of potential barriers to progress, with neither time nor energy left for developing elements of a solution. Even the amount of time and literary space dedicated here to challenges within academia begins to reflect such a rhetorical tone of complaint, most definitely not the purpose of this essay. Rather, our purpose here is to describe a process whereby a group of colleagues with diverse responsibilities within an academic unit that is interdisciplinary in nature developed a team approach to dealing with the challenges of time and balance among professional duties, with scholarship of teaching and learning playing a key role in the solution.

### **Disciplinary Diversity, a Book Club, and Boyer**

A main goal of this essay is that those from various disciplinary backgrounds may gain insight from our experiences. A description of the actual breadth within our group may therefore be valuable. We are an academic unit of Health, Physical Education and Exercise Science within a College of Education at a comprehensive university enrolling approximately 5000 students. The team of eight engaged in this project includes seven members of our academic unit joined by the director of our university Center for Teaching and Learning. Included are the chair of our unit, (a tenured faculty member in Health); two tenured faculty members and one pre-tenure faculty member in Physical Education and Exercise Science; two adjunct faculty members in Health; and one adjunct faculty member in Physical Education. Specific disciplinary educational backgrounds and instructional loads, as well as individual career paths, are too varied across the group to enumerate here. It is noteworthy, however, that there is also a high degree of disciplinary diversity within each member's individual background, much of which was unknown amongst colleagues prior to this process.

When responding to a query regarding primary interest in this project, responses were as varied as the disciplinary backgrounds represented. Common threads of interest included the desire to connect with colleagues on a scholarly level, to more fully understand student learning, and to facilitate lifetime health and wellness through movement and exercise. The last of these is very reflective of the wording in the academic mission statement of our unit, an observation that led us to note the similarity of process when comparing the development of a scholarly team with that of generating a mission statement for a diverse unit; strength can be found when recognizing disciplinary diversity, but all involved must be willing to strive for an end product that all members of the group can feel ownership in, and that promotes a common vision valued by the entire unit.

The importance of our project's foundation in a book discussion group should not go unrecognized. A process similar to ours was used by Levine et al (2007), and the importance of selecting a book that arches over interest areas within the group is apparent. In the case of Levine et al, the group also exhibited disciplinary diversity, including members from multiple academic departments with common interests cited as the desire to improve teaching and to use a theoretical model as a guide. Our own process may not have proceeded to the point of commitment to a longer term scholarly project had the initiator of the discussion group not had the foresight to select a work that arched over disciplinary boundaries and spoke to the scholarly and instructional components of each individual faculty position.

In the interest of full disclosure we should recognize that on first attempt the book club process came to a less than successful conclusion. Initiated with enthusiasm in the fall of 2006, the group met in a somewhat sporadic manner throughout the year with neither of our two goals, completing the book and generating a scholarly product from the process, realized. Individual time constraints such as those described earlier played a major role in this less than hoped for result. It is noteworthy that the most recent faculty collective bargaining agreement (faculty contract), which came into effect during fall of 2007, included language formally recognizing for the first time at our institution Boyer's multiple domains of scholarship relative to tenure and promotion standards. This occurrence not only spawned a desire of the authors to explore more deeply how development of an academic culture supporting multiple scholarly domains might be furthered on our campus, but also how the scholarship of teaching and learning specifically may be applied within our disciplinary areas.

One might argue that greater understanding of Boyer's domains, and specifically of the scholarship of teaching and learning, was the key that allowed us to find common ground and a stronger commitment to stay with the process the second time around. Where our initial attempt was characterized by our individual interpretation of the selected book from our unique backgrounds, the current process is characterized by many elements reflective of the Teaching Commons as described by Huber and Hutchings (2005). The writing and submission of this essay is in itself evidence of a transition in our view of scholarship. Placing value on the documentation and sharing of processes associated with the transformation in our pedagogical thinking and approaches to instruction was new to our group, and represented a shift away from the more narrow views of scholarship specific to our individual disciplines.

It was therefore a somewhat serendipitous combination of a book discussion group, a newly minted faculty contract recognizing Boyer's multiple domains of scholarship, and a genuine commitment from a disciplinary diverse group of colleagues to the academic mission of the unit, that allowed us to move beyond merely attending a book discussion group for personal enrichment, to functioning as a team of colleagues pursuing a scholarly project with a common goal. The remainder of this essay is dedicated to specific questions we asked and ideas generated along the way that led to the emergence of our longer term project.

### **Testing the Waters of Scholarship of Teaching and Learning**

Readings and discussions of the selection for our book group focus, *The Art of Changing the Brain* by James Zull (2002), led to our investigation of possible "next step" engagements with the points raised by Zull. Going beyond our initial discussions, we asked if we could begin to actively test any of Zull's insights. Not wanting to simply continue to talk about his points at meetings, finish the book and move on to the next, we began to discuss possibilities for exploring some of Zull's points in our classrooms and our teaching. Could we identify a point, or points, made by Zull that were pertinent to us? What issues in our teaching or within our classrooms were issues that Zull had addressed? Could Zull's insights provide us with guidance for addressing such issues?

Particular characteristics of our unit and the book club members had significant influence on our initial discussions of this next step. The courses that we would use in such a project are from a very diverse pool, ranging from activity based courses such as *Social Dance* and *Tai Chi* through lower division academic courses such as *Individual Health and Fitness* and *Foundations of Exercise Science* and upper division courses such as *Motor Learning, Motor*

*Development, Elementary Physical Education Teaching Methods, Biomechanics, Stress Management and Contemporary Health Issues.* This diversity of academic level and course content ensured that issues to be addressed and insights to be gained would be equally wide-ranging. Finding identifiable issues and or solutions did seem to be a very unreasonable goal to pursue, and was perhaps a stumbling point in our first year attempt. The question needing to be addressed was: What, if anything, did we have in common?

A potentially unifying component for our group was the factor of human movement. Movement, for skill development or as a part of healthful living, is the basis of, or the vehicle used for, many of our courses as well as being a significant part of the theoretical bases from which we each had come. Zull offered support for a movement-based theme by suggesting that learning does not become true learning until it has been actively tested. Active testing can be spoken in discussion or debate, written in researched papers or spontaneous journaling, or kinetic in movement or physical expression. The physical basis of movement as a common thread of all of our courses and its use as a way to actively test one's abstract thoughts gave us a common language with which to talk about our separate courses. In order to keep a strong bond between movement and learning, a specific task adopted by the group was to explore ways to make the activity-strong classes engage students with more writing and speaking and to make the more academic-based courses engage students in more active, full body activities.

Another target of our investigation was to identify instances of "incomplete," "misconnected" and "wrong" neural connections. Zull argued that such "wrong" information has a very real representation in the brain structure of the learner, is very strong and quite difficult to change or eliminate, and is better used as a base upon which to add new, different bits of information. Could we determine the initial state of students' knowledge, or the character of their neural networks (in Zull's language), as the term began and as new information was introduced throughout any course? Could we meet our students where they were and provide experiences that built upon their current knowledge in ways that added to, rather than attempted to eliminate, this prior knowledge?

Our initial meetings to plan our project led us to realize that this project would actually be a project of self-analysis. We would be looking at ourselves and our teaching, at our values and philosophies, and at our assumptions about teaching and learning. Self-analysis and critique are not easily done and observing ourselves as we taught seemed daunting and, in the words of one group member, "a scary idea." Were we willing to look for and find our flaws and ineffective methods? Could we accept the identification of traditional but perhaps ineffective strategies and work to replace them with more active approaches? As we tried new responses, could we accept the chaos of this change? A conscious shift of teaching, away from passive PowerPoint®-based lecture models to more active engagement of students in writing, discussing and moving seemed risky. Would we persist long enough to realize the value of such change, or would we revert to our individual zones of comfort?

A final question we asked was that of knowing if any changes we make would have a positive effect on students' learning. How much of a result could we claim if we were able to change our teaching to include more active testing of student learning and which addressed student misconceptions, but without hard pre- and post-change comparison data? To whom would we compare our students' performances? Would implementation of instructional change consistent with elements suggested by Zull, with qualitative documentation of our attempts, successes and failures, be a valuable and sufficient project? These questions again proved a stumbling block given the traditional scientific background and associated quantitative statistical training for many members of our group, and seemed

to be sending us once again in a direction of doing individual projects within the comfort zone of our individual disciplinary traditions.

This final point was overcome as the group reached consensus to direct our initial efforts on our own teaching behaviors. Self-analysis and changes in our teaching and class activities in response to points identified by Zull would be our focus. Our teaching and learning project would involve recognition and documentation of instances where we can identify misconnected or incomplete neural networks ("wrong information") as described by Zull, and to chronicle our approaches in redirecting or adding on to those brain structures through active testing and through the use of human movement. We essentially arrived at a phenomenological study of ourselves and of our teaching behaviors as we begin to implement change in our courses. Investigation of changes in students' learning and their perceptions of our teaching effectiveness would come in subsequent projects. For now, we are content to get comfortable with a process that differs from the norm within our disciplinary research backgrounds, and which begins with our looking at ourselves; at our teaching, at our delivery of content to students, at our scholarship, and at our commitment of time to this scholarship.

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