Chapter 10
Inquiring Minds in Undergraduate Instruction:
An Expression of the Teaching–Research Nexus

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EXECUTIVE SUMMARY

Research-based or scholarship-based teaching is better teaching because it leads to better learning and sustained motivation. Creating a mutually supportive link between teaching and research comprises the teaching-research nexus. In this chapter, the authors address the teaching-research nexus in undergraduate education by presenting a range of initiatives for inquiry-based instructional improvement through activities that require integrated, individual, and collaborative efforts in and across disciplines. The authors present theoretical and practical arguments of the theory of social constructivism in support of a professor's own scholarship and teaching. They also highlight the importance of changing the nature of undergraduate

teaching by offering examples of how undergraduate instructors can foster inquiry-based learning in their teaching as well as ways of facilitating these approaches to teaching. To be able to connect research and teaching in students' minds, instructors must strengthen within undergraduate students some of the knowledge, skills, and dispositions that enable the development and maintenance of inquiring minds.

ORGANIZATIONAL BACKGROUND

This case occurs at McGill University, a highly ranked medical-doctoral university that explicitly describes itself as research-intensive. The university offers some 300 different academic programs. About 9000 of its 37,500 enrollment are graduate students, almost 2000 studying for doctorates. The undergraduate students have the highest academic standing of all entering classes in Canada. This wealth of research opportunities is recognized as a major resource with potential to enhance the undergraduate learning experience, but progress toward making this connection is proceeding slowly. Large lecture halls are still the most common undergraduate learning setting, and even the greatly increased availability of internet-equipped spaces does not necessarily change the way undergraduates are taught. At the same time, McGill was the first in Canada to create an instructional-improvement service; this unit is well aware of the need to change the ways learning and teaching occur in the university. The impact is gradual but continuing. The case described in this chapter is based primarily on one of the examples McGill's Teaching and Learning Service has posted with its internet resources, plus one excerpt from a second example. Although teaching can be linked to research in any setting and in any discipline, the potential is especially great to have an impact upon large numbers of outstanding undergraduate students through this connection. However, this link does not ignite spontaneously. This chapter is about some of the ways to light the flame.

SETTING THE STAGE

The four main goals of this chapter are to:

1. Present some of the theoretical and practical arguments for the importance of changing the nature of undergraduate teaching in the direction of inquiry, the most important of which is our contention that taking this approach adds to the quality of education by bringing the instructor's own scholarship or research and teaching closer together in what is called the teaching-research nexus.

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