

## ENGAGING UNDERGRADUATES IN RESEARCH

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### Abstract

Undergraduate students are exposed to a variety of disciplinary content, which forms a general cluster of knowledge, but many students graduate without obtaining the skills associated with research and inquiry. This article is based on the premise that undergraduate students need to be empowered to construct their own knowledge as potential producers rather than mere consumers of knowledge. It provides a synthesis of cross-disciplinary perspectives and educational debates that support the argument for, and benefits of, providing research-enriched learning for undergraduate students. The article adopts a framework for the dimensions of research in undergraduate learning. The different models presented aim to illustrate the various ways that research can be integrated with teaching to benefit learning.

**Key Words:** Teaching-research nexus; undergraduate research.

### INTRODUCTION

Undergraduates are exposed to substantive information in a variety of areas and disciplines, which forms a general cluster of knowledge, but they graduate without acquiring the skills associated with research and inquiry. The teacher-centred information transmission approach is still observed to be the dominant approach to teaching in higher education (Kember, 2009). When students are treated as the audience for research in their undergraduate years, they become more concerned with the cues and information from the research literature rather than the processes involved in the research itself.

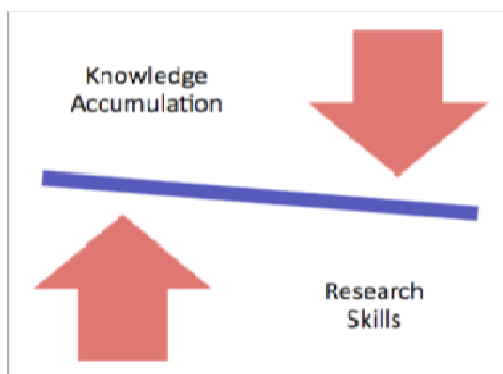


Figure 1: Knowledge Accumulation vs Research Skills

### TEACHING CONCEPTIONS & APPROACHES TO TEACHING

Kember (1997) reviewed 13 independent articles on teaching conceptions. His findings showed that conceptions of teaching could be classified under one or more of five categories, which are:

1. Imparting information (**Teacher-centred/ Content-oriented**)
2. Transmitting structured knowledge (**Teacher-centred/ Content-oriented**)
3. Student-teacher interaction/apprenticeship; (this category is situated in between the two orientations to teaching)

4. Facilitating understanding (**Student-centred/ Learning-oriented**)
5. Conceptual change/ intellectual development (**Student-centred/ Learning-oriented**)

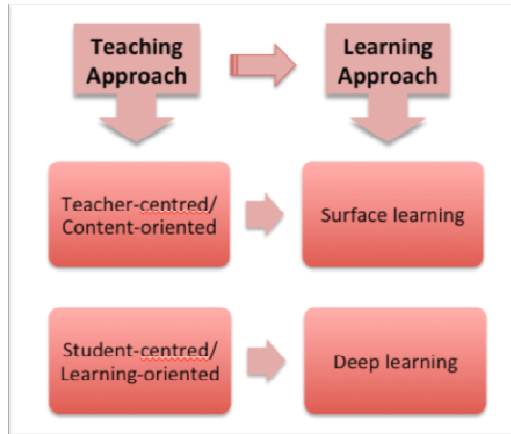


Figure 2: Teaching Approach vs Learning Approach

There is ample evidence to suggest that content-oriented approaches to teaching foster a surface learning approach while learning-oriented approaches foster a deeper learning approach (See: Trigwell, Prosser, & Waterhouse, 1999; Prosser & Trigwell, 1999; Ramsden, 2003).

### THE TEACHING-RESEARCH NEXUS

Economic interests, largely imposed by what governments consider relevant to wealth creation, are a major cause for the separation of research and teaching (Williams, 1991). Evidently, when research and teaching are evaluated separately in contexts other than learning, there is no evidence of causal relationships between the two activities (See: Centra, 1983; Ramsden & Moses, 1992; Hattie & Marsh 1996). There does not, however, appear to be a divide between research and teaching when viewed in the context of learning (Brew & Boud, 1995).

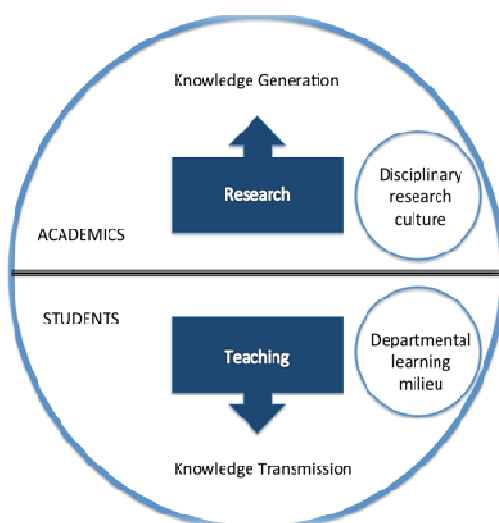


Figure 3: Traditional model of the relationship between teaching and research (Source: Brew, 2003).

### BLENDING RESEARCH AND TEACHING TO BENEFIT LEARNING

Universities all over the world are adopting the integration of research and teaching, and this trend is not limited to research-intensive universities. (Brew, 2007; Gonzales, 2001). There is also a growing amount of evidence that engaging students with research and inquiry is beneficial to their learning. (Healey, 2000; Jenkins, 2000; Brew, 2001; Healey & Jenkins, 2009; Kift, 2009; Nguyen, 2007; Saracevic, 2007). Not only should students be engaged in the production of knowledge, they must also develop the skills associated with research and inquiry, which is required to cope with the risks, uncertainties, and general complexities of the modern world (Scott, 2002).

A commonly cited framework for engaging undergraduates with research and inquiry was posited by Griffiths (2004), later revised by Healey (2005) and Healey and Jenkins (2009), and further developed by Ozay (2012). The framework posits four practicable models for engaging undergraduates with research and inquiry, and has one centric model representing an overarching approach to teaching, which is considered to be the necessary foundation from which the four ‘engaging’ models can be employed (Ozay, 2012).

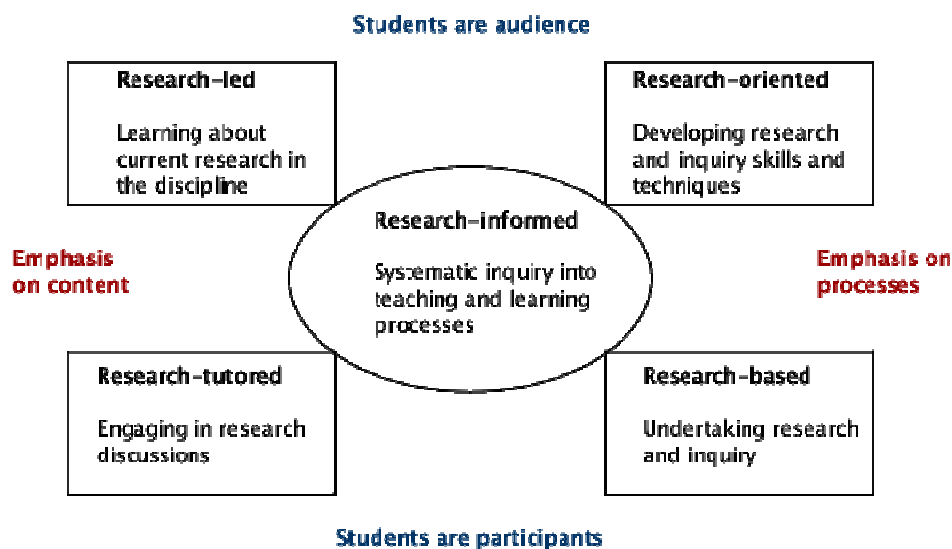


Figure 4: Dimensions of Research in Undergraduate Learning. (Source: Ozay, 2012; adapted from Healey & Jenkins, 2010)

A key assertion is that the models are not independent to one another. They can be applied progressively throughout the course of a unit of study and “curricula should contain elements of all of them” (Healey & Jenkins, 2009, p. 7). The research-informed model represents a student-centred approach to teaching whereby the educator reflects on their practice through student evaluations, collaborates with peers, and searches for tried and new methods of improving learning outcomes.

The research-led approach involves learning about current research in the discipline, which helps to familiarise students with the relevant body of knowledge (emphasis on content). The research-oriented approach complements the learning by focusing on research and inquiry methods and techniques (emphasis on processes). Once the student has been introduced to the content and skills, they are given opportunities to participate. The research-based approach involves students undertaking research and inquiry (emphasis on processes). The research-tutored approach is proposed to deepen the learning by discussing the ins and outs of the research experience (emphasis on content).



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