Chapter 64
Barriers to Emerging Technology and Social Media Integration in Higher Education:
Three Case Studies

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ABSTRACT

With technological innovation and social media infiltrating every field of activity, it was only a matter of time until universities and faculty would need to embrace the technological challenge. This chapter offers three case studies of social media training delivery in universities and researcher centres in the UK, USA, and Bahrain. These case studies cover the use of emerging technologies in higher education research, teaching and policy, and associated first- and second-order barriers to their implementation. Results and impact of the training sessions, including questions asked and feedback provided by participants are also discussed. The chapter emphasizes the increasing interest in training in emerging technologies for educators and affiliated university staff, but also highlights the challenges faced when promoting tools and platforms not supported by either the IT infrastructure of the universities or the policies in place.

INTRODUCTION

Why do we need to integrate emerging technologies and social media in higher education? The first reason is that universities are knowledge-producing and knowledge-sharing systems, and the world is undergoing a fundamental transformation in how it views, utilizes, and shares knowledge.

Knowledge is changing due to newer technologies, as well as the ability of the 'net generation' to utilize those technologies to communicate and learn in ways that have heretofore been impossible (Tapscott, 1988). Gibbons et al. (1994) differentiated between the two types of knowledge, the knowledge of the industrial age and new knowledge. The knowledge of the industrial age

has been termed Mode 1 knowledge; which was individually and academically created, and easily disseminated by the traditional university system utilizing books and lectures. The knowledge of the Information Age, Mode 2 knowledge, which is team created; interdisciplinary in its generation having applications in the real world that far surpass mode 1 types of knowledge. Universities of the future will need to make the transition from specializing in mode 1 knowledge to mode 2 knowledge to enjoy continued success in the knowledge economy. Technology implementation will be vital to the success of universities in making this transition, allowing interdisciplinary communication and knowledge generation in ways that have never been seen before.

The second reason for technology integration in higher education institutions is that the world has shifted from an industrialized economy to a knowledge economy (c.f. Hargreaves, 2000), and this change must be reflected in university classrooms. While in an industrial age, universities could function as sources of knowledge which prepared individuals for lifetime employment in a set career. However, society is now thirty years into the Information Age (Knight, Knight, and Teghe, 2006), and today's students need technologies to be fully integrated into the higher educational system, as they are in industry at large.

The evolution to a knowledge economy implies that knowledge will be the new capital of the future, which should be an occasion to rejoice for universities around the globe. Indeed, it means that universities should be revving into high gear, producing newer, better knowledge faster than ever. However, the bureaucracy and institutionalization incumbent in most places of higher education makes them resistant to change (Crow, 2012); although many scholars recognize the need for a fundamental alteration of the current system. According to Wheeler (2004), "there is...growing opinion that the very fabric of traditional educa-

tion must change, purely because it is a system originally set up to meet the needs of the industrial revolution, and is now hopelessly outmoded."

These sentiments were echoed by President Crow of Arizona State University in his 2012 presentation: *The Future of the New American University*. He argued that universities need to change from agencies to enterprises, committed to 'knowledge entrepreneurship' and creating graduates who have "knowledge in multiple areas to multiple depths" and "the ability to learn anything" so that they can work for many different employers in a wide range of occupations in the future. Crow's comments highlight the fact that knowledge itself is changing, along with the needs of graduates and the needs of industry. In order to discuss the changes to technological and social media integration as well as their associated barriers, it is first necessary to discuss the concept of change itself.

CHANGE

In their book, *Change: Principles of Problem Formation and Problem Resolution*, Watzlawick, Weakland and Fisch (1974) pioneered two differentiated concepts of change: first-order change and second-order change. First-order changes are fairly linear in nature and would be those which make small, incremental changes to current practices. Second-order changes, however, are non-linear, and involve a transformation from one state to another. For example, making a change where the problem is viewed from a different perspective, causing large changes to practice or a transformation of the system in which the problem resides. Maier (1987) used an excellent example with water, stating that a first order change would be water become warmer or colder, but a second-order change would be water changing to ice or steam. Maier also stated that second-order changes take

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