

Chapter 1

Curriculum Design for Developing Capacity to Deal with Complex Issues: Theoretical Perspectives

Cherry Stewart

Macquarie University, Australia

Ashfaq Khan

University of New England, Australia

John Hedberg

Macquarie University, Australia

ABSTRACT

This chapter explores mental complexity theory in relation to curriculum design and development, and its relationship to implementation as interactive distance learning. The authors propose that a particular philosophical mindset leads a curriculum designer to choose learning designs that fit within a particular thinking paradigm. The learning strategies designers choose in constructing the curriculum impact significantly on how their learners approach and gain from these experiences. The study explores philosophical paradigms relating to how a curriculum might be conceived and communicated. The authors offer a framework for creating curriculums that help learners to develop skills, knowledge and attitudes appropriate for dealing with greater degrees of intellectual, social and environmental complexity. In this argument, different forms of mental complexity are linked to three learning metaphors and learning design strategies associated with distance learning. The reflections of a curriculum designer demonstrate a changing mental structure. The authors suggest that a curriculum should work on and improve learners' brain agility so they can deal with new and complex issues without being dependent on pre-determined knowledge or solutions.

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INTRODUCTION

The world of the 21st millennium is a highly complex and inter-related society. Generally, we label it as complex according to our ability to deal with the issues and challenges we encounter in our daily activities. The challenge of facilitating human thinking as we deal with social complexities has been explored from a variety of perspectives. Complexity science encompasses theories and concepts from a range of differing disciplines—biology, anthropology, economics, sociology, management and others (Lacayo, 2008). Research reported in such related fields as brain research, organisational leadership, education, and psychology advocate for new perspectives on how we design and implement teaching and learning to better enable citizens of all ages to deal with the complex issues encountered in daily life (see, for example, Doidge, 2007; Heifetz, 1994; Kegan, 1994; Langer, 1997). Increasingly, authors are seeking to re-think how we educate populations. Environmentalist Cortese clearly lays out an argument for changing educational practices because “it is the people coming out of the world’s best colleges and universities that are leading us down the current unhealthy, inequitable, and unsustainable path” (2003, p. 16). Jarvis (1999) argues that what universities teach is not knowledge, but information, which only becomes knowledge when it has been learned, and only becomes legitimate knowledge when it has been found to work for the learners in their own particular context. Panda (2006) contested the very foundation of curriculum design in higher education, seeking an infusion of socio-economic, racial and cultural variables to strengthen human thinking and innovations.

Too often human learning is viewed as a commodity—*human capital*—to be trained and applied to the creation of additional products for distribution in the market place. Learning is seen as the product of an education, with knowledge defined as a product that can be transferred from one person to another by lecturing, or by reading

the words of an expert. In higher education we tend to demand proof of knowledge acquisition by asking for the creation of a *product of learning* (an assessment), generally in the form of a written document. In this paper, we suggest that it is the *process of, and action resulting from learning* rather than the product, that will engage complex human thinking that can create and manage an adaptive, innovative and humane culture. In our fast paced, digitally driven, mobile and information-laden society, it should be asked whether teaching and curriculum design models historically employed by universities are still relevant, or even effective, in achieving complex learning outcomes enabling populations to deal with the new millennia economic, social and organisational cultures we inhabit.

Much of the curriculum design literature focuses on the need for our teaching practices to change in pace with the changing technologies (see, for example, Herrington, Herrington, Hoban, & Reid, 2009; Herrington, Oliver, & Reeves, 2006). While more often than not, it is the strategy or technique used for implementation that receives attention in the literature, consideration of the personal growth and learning of the curriculum designer may impact more significantly on the development and implementation processes. A major challenge, as we apply the ubiquity of digital technologies to learning, is to critically reflect on what is to be achieved by applying omnipresent tools to information gathering, retention and problem-solutions. A survey of recent research in how the mind works and its relationship to human learning presented by Doidge (2007) provides a basis for reconsidering how we design curriculum and structure learning opportunities. Applying a growing knowledge base about learning and cognitive structures will assist curriculum designers to create learning environments that support the development of minds with a greater capacity for dealing with complexity.

The networked technologies now available to mediate reflective interactive learning allow both higher education policy makers and practitioners

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