

Virtual Knowledge Space and Learning

Meliha Handzic

Sarajevo School of Science and Technology, BiH, Croatia

Joanne Chia Yi Lin

The University of New South Wales, Australia

INTRODUCTION

The growing importance of knowledge and innovations for modern organisations (Davenport, DeLong, & Breers, 1998; Drucker, 1998; Nonaka, 1998; Stewart, 1997), and increasing demands for new skills and capabilities suggest the need for improvement in the learning of future professional and managerial workers. This, in turn, requires an appropriate response from the education sector. So far, these demands have not been adequately addressed by management education (Seufert & Seufert, 1999). There are calls to base the learning more in reality, to make the learning and thought process visible in order to develop the learners' metacognition (Joyce & Weil, 1986), and to achieve better balance between the imparting of knowledge to the learner and the learner's own construction of it. It is also suggested that education should better nurture students' qualities such as problem solving, decision making, and creativity through self-directed as well as collaborative creativity and learning. These are skills that students will require in order to be successful in their future roles as innovative professionals and business people.

Given the crucial importance of knowledge and innovation for success in the knowledge economy, the main purpose of this study is to address the issue of students' learning in the context of graduate information-systems education. In particular, the article will investigate students' idea-generation behaviour and propose a Web-based knowledge space or k-space as a flexible learning tool to support their individual styles.

LITERATURE REVIEW ON IDEA GENERATION AND KNOWLEDGE MANAGEMENT

Idea generation can be defined as the production of novel and appropriate ideas, solutions, and work processes. A holistic view of idea generation has been recently provided by Shneiderman (2000). He differentiates three approaches: *inspirationalist*, which concentrates on the intuitive aspects of idea generation; *structuralist*, which emphasises the importance of previous work and methods in exploring different possible solutions; and *situationalist*, which focuses on the social context as a key part of the idea-generation process. Vandenbosch, Fay, & Saatciglu (2001) argue that most theories study idea generation in terms of individual characteristics, contexts in which ideas flourish, or details about processes in which ideas are developed. They argue that in real life, people do not come up with ideas in isolation, and that different combinations of contextual and personal characteristics may result in different but equally effective processes.

Taking a broader view of the cognitive-styles perspective, these researchers investigate the inter-relatedness of idea generation, problem solving, and inquiry to explore the notion of archetype based on Churchman's (1971) system of inquiry. Figure 1 shows Vandenbosch et al.'s (2001) proposed classification scheme, which involves five idea-generation archetypes (Leibniz, Locke, Kant, Hegel, and Singer) based on individual approaches to information acquisition, change, relationships to others, and problem solving.

Figure 1. Five idea-generation archetypes

	Leibniz	Locke	Kant	Hegel	Singer
Information Acquisition	Searching	Searching	Scanning	Scanning	Scanning
Approach to Change	Maintaining	Reacting	Initiating	Initiating	Initiating
Relationship to Others	Directing	Mediating	Collaborating	Internalizing	Unpredictable
Problem Solving	Retaining	Converging	Diverging	Debating	Unpredictable

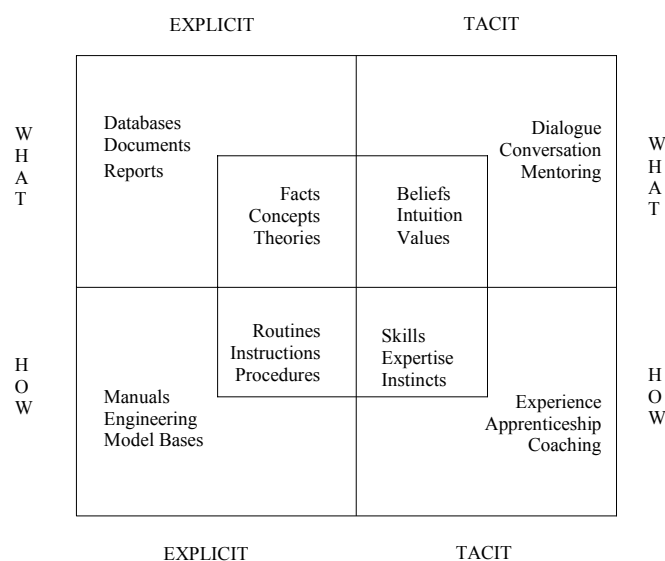
In summary, Leibnizian inquirers are seen primarily as incrementalists, placing a great deal of importance on what they already know. Lockean inquirers are known as the consensus builders, typically asking others to generate ideas and focusing on agreement. Kantians are viewed as searchers who combine ideas from diverse sources and unusual associations. Hegelians are known as debaters arguing internally with themselves to develop ideas. Finally, Singerians are considered the most flexible inquirers, comfortable with and employing all systems of inquiry.

Knowledge management (KM) is the most recent response to the need to better understand and manage knowledge for success or survival. Knowledge management is concerned with the processes of creation, acquisition, organisation, and transfer of knowledge, as well as organisational, cultural, technological, and

measurement enablers that may facilitate these processes and foster the development of working knowledge and performance. The central task of those concerned with knowledge management is to determine the best ways to cultivate, nurture, and exploit knowledge at individual and organisational levels. In other words, knowledge management needs to ensure that the right knowledge gets to the right people at the right time, and it helps people share and put knowledge into action in ways that strive to improve organisational performance (O'Dell & Grayson, 1998).

Different approaches for knowledge management are possible, originating from cognitive psychology, philosophy, education, science, finance, and information technology. While all are valuable, they deliver only a partial view on the whole topic. Davenport and Prusak (1998) maintain that it is only possible to

Figure2. Core knowledge-management framework



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