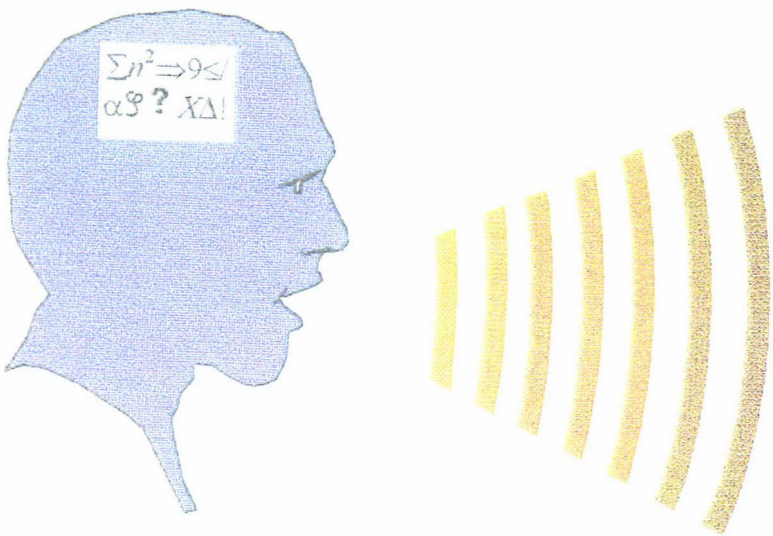
MAPPING COGNITIVE ARCHITECTURES: AN INFORMATION PROCESSING APPROACH



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Mapping Cognitive Architectures: An Information Processing Approach

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Abstract

This research attempts to answer the following question. How can the critical knowledge and mental processes used by people as they respond to their work demands and interact with their work environment, be identified and portrayed? This study uses an information processing model to focus on cognitively-based management competencies. The MAPA model, describes four crucial and interrelated stages in the recognition of what is thought to occur in human information processing. The resulting cognitive architectures reveal specific organisationally-valued knowledge, providing the basis for work-specific curriculum design. Organisational discrepancies of a cognitively-based nature are also identifiable.

A sample of New Zealand Army officers (N=103), comprising lieutenants, captains, and majors, completed questionnaires about their work-related cognitive processes. The MAPA model has facilitated greater understanding of respondents' combined work-related knowledge and knowledge structures.

The cognitive architectures identified by this research reveal that New Zealand Army officers have wide patterns of connectivity. This suggests that many theories are too simplistic in their descriptions of managerial and/or leadership behaviour. Prototype architectures devolved from the data illustrate a variety of cognitive activities appearing initially as people-oriented, such as listening, coaching, caring, and guiding, but which are instigated for the purpose of achieving the set task. This suggests that respondents perceive supportive Abilities to provide the most important method for achieving some tasks. This finding creates a theoretical paradox. Using commonly-held views on work orientations, it could be argued that some people have a task orientation while applying supportive behaviours in order to achieve that task. The stereotypical view of the task orientation is also disputed however, as the cognitive architectures resulting from this study indicate that concern with task completion is achieved predominantly through the use of what has been categorised as thinking functions, in that they represent problem solving and assessing Abilities. The findings suggest that army officers predominantly

employ a deliberate information processing strategy of supportive behaviour in order to complete their goals.

In summary, this study explores a scientific approach for the recognition of cognitively-based competencies of managerial-level personnel. The results suggest that twelve Accomplishments describe the cognitively-based managerial-level competencies most valued by the New Zealand Army. In the process of identifying these value-added attributes, some organisational idiosyncrasies have been detected that, it is argued, may ultimately jeopardise the New Zealand Army's attempts to successfully implement its stated war-fighting and command operating doctrines.

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