Problem Solving Through Cognitive Engagement

PhD thesis

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A thesis submitted for the degree of Doctor of Philosophy for the University of New England.

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First Submission: July 2007
Second Submission: August 2007
Revisions: January 2008

Acknowledgments

I first and foremost want to thank God for helping me get through this and remaining "whole". To my wife Danielle I wish to say thank you for giving me the space, time and energy to work on this when it seemed like it would never be finished. Claire and Natalie, my two daughters, thank you for distracting me when I became too serious. I owe a debt of gratitude to Dr Paul Ledington and his wife Jeannie Ledington for shaping this work in the early parts of this thesis. I wish you both the best. Special thanks to Kevin Burgess whose intellectual conversations and invaluable feedback formed the basis for many long periods of arguing, discussion and reflection during the production of this thesis. Dr Dale Mackrell, thank you for helping in the later phases of the thesis. Dr Donald Kerr, who gave good advice and access to research sites through his network of contacts ... without your help I wouldn't be writing this now! To the administration team at UNE, from the very beginning I gave you a massive headache and it seemed to continue throughout. Thanks for your understanding, patience and help during the past three years. To my supervisor at UNE, Dr Kala Saravanamathu, thank you for your continued support and help, not to mention the long phone calls, keeping me enrolled and getting my research back on track during a rough time. This would have never been completed without your help. Finally to Associate Professor Mike Metcalfe, thanks for resurrecting this research from the dead with your quick responses, thoughtful advice, supreme guidance and words of encouragement and support. Every doctoral student should have a supervisor as optimistic and encouraging as you! God bless you all.

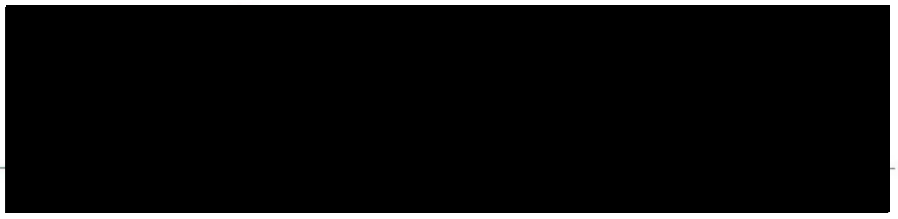
Abstract

The traditional problem solving model characterised by Simon's chess playing steps of first collecting information and then evaluating alternative solutions, has been found to be problematic for dealing with complex, messy or wicked problems. Continuing in the tradition of the 'soft' management sciences and pragmatic systems thinking literature, this thesis seeks elaborations to this traditional problem solving model. It adopts an interpretive epistemology, believing problems to be social constructs. It therefore suggests that problem solving be seen more in terms of appreciating and responding to participants' cognitive frames. These frames are seen as the "windows" that form the conceptualisation of the way in which actors understand the world. Responding and interacting to these conceptual frames is called the 'cognitive engagement' approach to problem solving.

This thesis, therefore, first highlights some of the limitations of the traditional problem solving model to demonstrate that something more generic is required for messy or wicked problems. It then summarises the now extensive literature that argues that this sort of problem solving is best understood in terms of shifting participants' cognitive frame rather than in terms of information collection. Next, the cognitive engagement literature is summarised to demonstrate that this does seem to provide a viable alternative. The cognitive engagement concept is then justified by using it to interpret two areas of concern. One involves an aid agency, which solved its perceived funding problems only when it was forced to change its conceptual frame by a tragic event. The second is an in-depth case which involves a large transport company that was having problems implementing its supply chain enterprise system because operators had a different conceptual frame to that of the management. It is concluded that the cognitive engagement concept offers a useful alternative addition to how we should think about problem solving involving human activity.

Certification

I certify that the substance of this thesis has not already been submitted for any degree and is not currently being submitted for any other degree or qualification. I certify that any help received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

Signed _____ 

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Chapter 1 Introduction

"To everyone who has a hammer, everything looks like a nail," *Russell Ackoff.*