

THE DEVELOPMENT AND EVALUATION OF A CONSTRUCTIVIST
FRAMEWORK FOR DESIGNING INFORMATION LITERACY LEARNING
IN THE CONTEXT OF THE NEW ZEALAND CURRICULUM

by

Gwen (R.M.) Gawith

BA (Cape Town) MA (Information Studies) (London)
Dip Lib (Aberdeen) Dip Ed (London)

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

July 1999

Acknowledgments

To David, Janet, Judine, Justine, Leonie, Randall, Rob and Stephanie, many thanks for providing the fuel for this journey, and to Col and Ken and the UNE Department of Curriculum Studies for providing a welcoming environment and encouragement.

ABSTRACT

The study sets out:

- to develop a conceptual framework for information literacy learning;
- to develop a pedagogic model and framework for constructivist information literacy learning within the New Zealand school curriculum;
- to trial, amend and evaluate the pedagogic model and framework (CILL Framework) using action research methods in relation to its utility in the New Zealand classroom.

Information literacy is examined as a concept and pedagogical approach in the context of the information society, and in relation to developments in the New Zealand education system. The origins of information literacy and information literacy learning are attributed to two discrete professional fields, librarianship and educational technology, and to two approaches to learning, resource-based learning and technology-based learning, particularly technology-enhanced 'knowledge construction environments'.

Drawing on existing definitions and descriptions of information literacy, on existing learning/teaching frameworks, on the existing resource and experience base in both professional fields, and on a synthesis of a variety of educational theories and approaches, a conceptual model of constructivist information literacy learning is developed

This model is elaborated as three assumptions and nine pedagogical propositions. These underpin the design of the pedagogic framework. The framework (CILL Framework) was then trialled and amended with teachers, using action research methods.

The model and framework support an analysis, interpretation and integration of:

- research and writing on information literacy over 25 years
- recent research and writing on constructivism and other approaches to learning seen to contribute to information literacy learning
- recent writing on constructivist learning design.

The use and evaluation of the framework by teachers supports:

- its utility as a diagnostic, predictive and explanatory tool for analysing effective/ineffective information literacy learning
- the development of theoretically-grounded insights for the further development of a coherent constructivist pedagogy of information literacy.

TABLE OF CONTENTS

ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTERS	
1 INTRODUCTION, RATIONALE AND CONTEXT.....	1
Cycles of the study and plan of thesis	1
Outline of thesis argument.	4
Parameters and limitations of study	5
Rationale and context	8
The information society as a context... ..	8
New Zealand curriculum as a context... ..	13
Assessment	
Unit Standards	
Information literacy learning and the New Zealand curriculum	
2 INFORMATION LITERACY AND CONSTRUCTIVISM	19
Defining information literacy	19
Origins in resource-based learning : Research and examples	
Origins in technology-based learning: Research and examples	
3 ACTION RESEARCH METHODS	34
Action research and constructivism.	37
Action research models and traditions	38
Summary of the research process and plan	42

4	ESTABLISHING A CONCEPTUAL FRAMEWORK FOR INFORMATION LITERACY LEARNING	43
	Information literacy learning and constructivism	43
	Concerns and constraints in constructivist information literacy	46
	Relevance of constructivist thinking to information literacy pedagogy	47
	Characteristics of constructivist information literacy learning	50
	Vygotsky's work as a guiding metaphor	50
	Theories/models of learning contributing to information literacy learning	53
	Discovery learning	
	Generative learning	
	Experiential learning	
	Situated learning	
	Assumptions examined in relation to theory:	
	1. Control	66
	self-efficacy: the influence of Bandura's work	
	motivation	
	planning and goal setting	
	self-regulated and self-directed learning	
	metacognition and metalearning	
	2. Coaching/mediation	73
	cognitive apprenticeship	
	learning to learn	
	3. Context	76
	reciprocal teaching and cooperative learning	
	constraints	
5	DESIGNING A PEDAGOGIC FRAMEWORK FOR INFORMATION LITERACY LEARNING	80
	Designing constructivist information literacy learning : two examples	80
	Vygotsy : metaphor applied to learning design	84
	Design issues	86
	mediation	
	knowledge vs information	
	social vs individual learning	
	designing a learning environment	
	Instructional Design (ID) and Designing Learning (DL)	89
	Design issues arising from the ID/DL dialogue	92
	Constructivist learning design characteristics	93

Designing the CILL Framework	95
Purpose and function	
Grounded in constructivism	
Design principles	
The CILL Model and CILL Pedagogical Propositions	99
6 ACTION RESEARCH CYCLES 5 A - D :	
Designing the Teacher Cycles	102
Designing Cycle 5	102
Selection of the action research group	
Composition of the group	
Identity of the teachers	
Role of the researcher in the research process	
Data gathering	
Analysis of data	
Veracity	
The cycles	
Changes to the CILL Framework after Teachers' Cycles A and B	
Emerging threads	
Research parameters and methodological limitations	
7 INFLUENCE OF THE CILL FRAMEWORK...	
Evidence from Teachers' Cycles (5 A and B).....	113
Framework for the analysis of Cycle 5 data	113
Diagnostic use of the Framework	114
Evidence from Teachers' Cycles A and B related to the understanding and use of the CILL model and the assumptions.....	116
CONTEXT	116
CONTROL	119
COACH	123
Evidence related to the use of the framework	124
Evidence of changes in teachers' approach to teaching information literacy learning	127
Evidence of changes in teachers' perception of students' constructivist information literacy learning.....	131
Learning and teaching issues that emerged... ..	132
Changes recommended by teachers to the Framework after Cycles A and B ...	133
8 INFLUENCE OF THE CILL FRAMEWORK...	
Evidence from Teachers' Cycles (5 C and D)	134
The research process	134
Successes and benefits from using the CILL Framework.....	136
Evidence related to the assumptions	139
Evidence related to the propositions	139

9	INSIGHTS: Exploring the conceptual and pedagogical boundaries of information literacy	152
	Theoretical insights	152
	Epistemological insights	154
	Pedagogical insights	157
	Insight 1: The CILL Framework establishes conditions for successful information literacy learning	157
	Insight 2: The three conceptual assumptions are sustained in pedagogy	158
	Insight 3: Self-directed learning is an unachievable myth	159
	Insight 4: Learning environments must be designed	161
	Insight 5: Conferencing emphasises reactive teaching	162
	Insight 6: There is a conflict between information literacy learning and question-answer ‘project’ models	163
	Insight 7: Students’ mental models of learning must be challenged	165
	Insight 8: Teachers need to challenge their pedagogical beliefs	166
	Insight 9: The information process is a mixed blessing	168
10	CONTRIBUTIONS OF THIS STUDY TO THE FIELD OF INFORMATION LITERACY LEARNING	169
	Developing the SILL Framework for Information Literacy Learning	169
	Theoretical contributions	173
	Epistemological contributions	174
	Pedagogical contributions	175
	REFERENCES	177
	APPENDICES	204
	1. Analysis of resource-based learning studies	204
	2. NUD*IST analysis of Cycle 1 - 5 data	206
	3a. CONTEXT: narrative map	213
	3b. CILL Propositions: Working document	214
	4a. CILL Framework: Version 1	219
	4b. CILL Framework: Version 2	226
	5. NUD*IST node list	235
	6. Semi-structured phone interview on use of the CILL Framework	241

LIST OF TABLES

Table 1: Summary of the research process and the research plan	42
APPENDIX 2	
Table 2: Questions related to propositions	206
Table 3: Questions related to the assumptions: context	207
Table 4: Questions related to the assumptions: control	208
Table 5: Questions related to the assumptions: coaching	209
Table 6: Questions related to uses of the Framework	211
Table 7: Questions related to suggested amendments fo the Framework	211
Table 8: Questions related to perceived ‘breakthroughs’	211
Table 9: Questions related to use of information technology	212
Table 10: Questions related to diverging researcher/ teacher opinions	212
Table 11: Questions related to constructivist concerns	212

LIST OF FIGURES

Figure 1: Overview of chapters and research cycles	2
Figure 2: Theories and models of learning contributing to information literacy learning	54
Figure 3: Towards a model of information literacy learning	63
Figure 4: Model of Constructivist Information Literacy Learning	99
Figure 5: Co-directed learning	160
Figure 6: Strategic Information Literacy Learning (Sill) Framework	171