THE DEVELOPMENT OF LEARNING AND TEACHING STRATEGIES AND TECHNICAL TEXTS FOR DIVERSE GROUPS OF ADULT LEARNERS

A Dissertation submitted by

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For the award of

Engineering Doctorate

2008
Abstract

Designing, developing and delivering effective technical education for diverse groups of adult learners is important for both the learners and the future of the technical discipline. The many nuances associated with adult learners, combined with the challenges associated with exploring technically complex topics, make effective technical education difficult to achieve. An understanding of adult learners and teaching, coupled with a robust development framework can help produce effective teaching strategies and technical texts for diverse groups of adult learners.

A literature review focusing on current research regarding adult learners was conducted to investigate some of the nuances of the adult learner. Specifically, the differences between adult learning and child learning were explored which lead to research on the role of experience in learning, the different approaches adult students typically take to learning, and the likely diversity in preferred learning styles within groups of adult learners. The literature review also investigated the role of the teacher in adult education, focusing on the need for learning facilitation in adult education. The desirable characteristics of teachers of adults were also investigated leading to an appreciation of the attitudes, attributes and approaches that teachers can take to enhance the learning experience for adults.

A conceptual framework for the development and delivery of adult education courses was proposed and explained. The framework was based on established complex problem solving principles and covered the entire lifecycle of an adult education course from the identification of a need for a course through to its delivery (and revision). The framework was based on a top-down approach to educational design. This was articulated using a VEE diagram that explained how the lifecycle stages (decision, design, development, and delivery) could build upon one another through concepts such as traceability, ongoing verification and feedback. The principles of adult learning and teaching were integrated into the framework via the activities associated with the design, development and delivery of courses.

The framework, and the information contained in the literature review, has been applied to the development of three different technical courses for three different groups of
adult learners. As a result of the application of the framework and the development of these courses, a number of technical texts has been written and published to support the courses. The adaptability and success of the framework are evidenced by the ongoing and expanded adoption of the courses to support adult education, the publication record being established by the texts, and the positive student and peer review of the adult teaching strategies employed in those courses.

It is concluded that the framework and the analyses arising from the literature review have the potential to be of value and interest to other teachers responsible for the design, development and/or delivery of adult education in technical fields.
I certify that the ideas, experimental work, results, analyses, software and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

Signature of Robert Ian Faulconbridge  Date

ENDORSEMENT

Signature of Professor David Dowling  Date
(Supervisor)

Signature of Associate Professor Nigel Hancock  Date
(Supervisor)
Acknowledgements

I would like to thank my supervisors, Professor David Dowling and Associate Professor Nigel Hancock for taking on the extra work and effort associated with research supervision. These men were active and energetic supervisors who were extremely generous with their time, and constructive in their guidance. Their expertise, advice and review always added value to my work. They showed enthusiasm and genuine interest in my work and made me feel as though what I was doing was worthwhile.

I would also like to acknowledge the help provided to me by Associate Professor David Buttsworth, who not only took an interest in my academic progress, but also helped me through the administrative process associated with a research degree.

I often tell my wife, Anne, how much I appreciate everything she does for me, so I am confident that she already knows how much she helped me with this work. I acknowledge her here so that other people know how much I value her kindness, patience, and intelligence. Burning the midnight oil to complete a research degree part-time is only possible if someone else is keeping the home fires burning.
Table of Contents

Abstract ......................................................................................................................................... i
Certification ................................................................................................................................iii
Acknowledgements ..................................................................................................................... v
Table of Contents ......................................................................................................................vii
List of Tables ............................................................................................................................xiii
List of Figures ............................................................................................................................ xv

Chapter 1 Introduction .......................................................................................................... 1
  1.1 Overview .................................................................................................................... 1
  1.2 Aims and Objectives ................................................................................................. 2
  1.3 Significant Contributions .......................................................................................... 4

Chapter 2 Review – The Adult Learner .............................................................................. 5
  2.1 Introduction to Pedagogy and Andragogy ............................................................... 6
    2.1.1 Pedagogical and Andragogical Models of Learning .................................. 6
    2.1.2 The Need to Learn ................................................................. 8
    2.1.3 The Learner’s Self-Concept .................................................... 8
    2.1.4 The Role of Experience ...................................................... 9
    2.1.5 Readiness to Learn ............................................................ 10
    2.1.6 Orientation and Motivation to Learn ..................................... 10
  2.2 Experience and Learning ........................................................................................ 10
    2.2.1 Experiential Learning Models .............................................. 11
    2.2.2 Learning as a Means of Effecting Change ............................. 14
  2.3 Student Approaches to Learning ............................................................................ 18
    2.3.1 Broad Learning Approaches .............................................. 19
    2.3.2 The Surface Approach to Learning .................................... 20
    2.3.3 The Deep Approach to Learning ....................................... 21
    2.3.4 Factors Influencing the Adoption of a Learning Approach ....... 22
2.3.5 Promoting Deeper Approaches to Learning ..............................................23
2.4 Diverse Learning Styles ..................................................................................27
  2.4.1 Learning Styles and Engineering Education ...........................................28
  2.4.2 Learning Style Diversity in Adult Students .............................................30
  2.4.3 Additional Benefits Associated With Learning Style Awareness ..........31
    2.4.3.1 Student Self-Awareness ...............................................................31
    2.4.3.2 Creating a Common Learning Style Lexicon ...............................32
    2.4.3.3 Deliberate and Controlled Mismatching of Learning Styles...........32
2.5 Conclusions .....................................................................................................33

Chapter 3 Review – The Teacher of Adults ..........................................................35
  3.1 The Teacher as a Learning Facilitator ..........................................................36
  3.2 Facilitating Learning in Adult Learners .......................................................37
    3.2.1 Teachers Attitudes ...............................................................................37
    3.2.2 Attributes of Teachers .........................................................................38
    3.2.3 Approaches to Teaching .......................................................................39
    3.2.4 Using Student Feedback .......................................................................41
  3.3 Conclusions ...................................................................................................42

Chapter 4 A Conceptual Framework for the Design, Development and Delivery of
Courses for Adult Learners ......................................................................................43
  4.1 Introduction ...................................................................................................43
  4.2 Concept and Overview ...............................................................................44
  4.3 A Suitable Lifecycle Model ..........................................................................47
    4.3.1 Introduction .........................................................................................47
    4.3.2 The Decision Stage ..............................................................................50
    4.3.3 The Design Stage .................................................................................52
      4.3.3.1 ‘Top Down’ and ‘Bottom Up’ .......................................................56
      4.3.3.2 Traceability ...............................................................................58
      4.3.3.3 Inter-relationships .......................................................................58
      4.3.3.4 Verification ...............................................................................59
      4.3.3.5 Assessability ..............................................................................59
    4.3.4 The Development Stage ..........................................................................60
    4.3.5 The Delivery Stage ...............................................................................63
      4.3.5.1 Ensuring the Learners Understand the Need to Learn .................64
      4.3.5.2 Establishing a Suitable Learning Environment .........................65
      4.3.5.3 Discussing the Concept of Learning .........................................66
Chapter 5  Application to the Teaching of Radar systems ............................. 71

5.1 Introduction ........................................................................................................ 71
5.2 About the Learners .............................................................................................. 72
5.2.1 Background, Context and Prior Knowledge ............................................. 72
5.2.2 Motivation, Attitudes and Approach ......................................................... 73
5.3 Scope and Nature of Modern Radar Systems ..................................................... 74
5.4 The Decision to Develop the PWO Radar Systems Course ......................... 76
5.4.1 Introduction ................................................................................................. 76
5.4.2 The Need for the Radar Systems Course................................................... 76
5.4.3 Course Constraints and Opportunities ....................................................... 77
5.4.4 Course History ............................................................................................ 78
5.5 Course Design ..................................................................................................... 78
5.5.1 Introduction ................................................................................................. 78
5.5.2 Course Rationale ......................................................................................... 79
5.5.3 Learning Objectives .................................................................................... 82
5.5.4 Developing Course Structure ..................................................................... 83
5.5.5 Developing the Assessment ....................................................................... 84
5.6 Development of the Course Content ................................................................. 86
5.6.1 Development and Publication of the Radar Text ...................................... 86
5.7 Course Delivery .................................................................................................. 88
5.7.1 Course Evaluation ....................................................................................... 92
5.8 Review .................................................................................................................. 92

Chapter 6  Application to the Teaching of Avionics Systems .............................. 95

6.1 Introduction ........................................................................................................ 95
6.2 About the Learners .............................................................................................. 96
6.2.1 Background, Context and Prior Knowledge ............................................. 96
6.2.2 Motivation, Attitudes and Approach ......................................................... 98
6.3 Scope and Nature of Modern Avionics Systems ................................................. 99
6.3.1 Introduction..................................................................................................99
6.3.2 Modern Avionics Systems..............................................................................100
6.4 The Decision to Develop the Avionics Course ..............................................102
   6.4.1 Introduction..............................................................................................102
   6.4.2 The Need for the Avionics Course ...........................................................102
   6.4.3 Course Constraints and Opportunities ....................................................104
   6.4.4 Course History .......................................................................................104
6.5 Course Design ...............................................................................................105
   6.5.1 Course Design Philosophy ......................................................................105
   6.5.2 Course Rationale and Overview .............................................................106
   6.5.3 Learning Objectives ...............................................................................108
   6.5.4 Course Structure Development .............................................................109
   6.5.5 Developing the assessment ..................................................................114
6.6 Development of the Course Content ............................................................115
   6.6.1 Development and publication of the Avionics Text ................................116
6.7 Course Delivery ..............................................................................................117
6.8 Review ............................................................................................................119

Chapter 7  Application to the Teaching of Systems Engineering ......................121
7.1 Introduction ..................................................................................................121
7.2 About the Learners .......................................................................................122
   7.2.1 Background, Context and Prior Knowledge .........................................122
   7.2.2 Motivation, Attitudes and Approach ...................................................122
7.3 Scope and Nature of Systems Engineering ....................................................123
7.4 The Decision to Develop the Systems Engineering Course .......................124
   7.4.1 Introduction............................................................................................124
   7.4.2 The Need for the Systems Engineering Course ....................................124
   7.4.3 Course Constraints and Opportunities ...............................................126
   7.4.4 Course History .....................................................................................127
7.5 Course Design ...............................................................................................127
   7.5.1 Introduction............................................................................................127
   7.5.2 Course Overview ..................................................................................127
   7.5.3 Learning Objectives .............................................................................130
   7.5.4 Development of the Course Structure ..................................................131
   7.5.5 Development of the Assessment ...........................................................133
7.6 Development of the Course Content ............................................................134
   7.6.1 Development and Publication of the Systems Engineering Texts .........134
List of Tables

Table 2-1. The focus of pedagogical and andragogical models................................................ 7
Table 5-1. Traceability between radar learning objectives and course modules................. 84
Table 6-1. Traceability between avionics learning objectives and course modules............. 112
Table 7-1. Traceability between systems engineering learning objectives and course modules. .................................................................................................................................... 132
Table 8-1. Educational variables in the three courses developed using the framework. .... 150
Table 9-1. Comments from 4th year undergraduates (Bachelor of Engineering) relating to either the teacher or teaching. .................................................................................................. 162
Table 9-2. Comments from 4th year undergraduates (Bachelor of Engineering) relating to the course......................................................................................................................................... 163
Table 9-3. Comments from 2nd year undergraduates (Bachelor of Engineering) relating to either the teacher or teaching. .................................................................................................. 164
Table 9-4. Comments from 2nd year undergraduates (Bachelor of Engineering) relating to the course......................................................................................................................................... 167
Table 9-5. Comments from 2nd year undergraduates (Bachelor of Technology) relating to either the teacher or teaching. .................................................................................................. 168
Table 9-6. Comments from 2nd year undergraduates (Bachelor of Technology) relating to the course......................................................................................................................................... 170
List of Figures

Figure 1-1. Entwistle and Ramsden’s 3-way transaction ......................................................... 3
Figure 2-1. Characteristics of the student to be investigated. ................................................. 5
Figure 2-2. The Lewinian Experiential Learning Model ....................................................... 11
Figure 2-3. The Jarvis model of the process of experiential learning ................................... 12
Figure 2-4. Representation of Dewey’s Model of Experiential Learning ............................... 13
Figure 2-5. Boyle’s concept of education .............................................................................. 15
Figure 2-6. Vision of continuity ............................................................................................ 16
Figure 2-7. Educational experience resulting in positive change ......................................... 17
Figure 2-8. Educational experience resulting in negative or no change ............................... 17
Figure 2-9. Felder’s Learning Styles ................................................................................. 30
Figure 3-1. Aspects of the teacher to be investigated .......................................................... 35
Figure 4-1. Design and development of the course material ................................................. 45
Figure 4-2. Houle’s educational design lifecycle ................................................................. 48
Figure 4-3. Simplified educational design lifecycle ............................................................. 49
Figure 4-4. The continuum illustrating educational need ..................................................... 50
Figure 4-5. Pyramid peaked by the need ............................................................................. 51
Figure 4-6. Knowledge hierarchy (conceptual) ..................................................................... 53
Figure 4-7. Knowledge structure and course structure relationship (conceptual) .............. 54
Figure 4-8. Allocation matrix (conceptual) ............................................................................ 55
Figure 4-9. Determining the learning resources and approaches (conceptual) ................. 55
Figure 4-10. VEE diagram applied to educational development .......................................... 57
Figure 4-11. Integration of the elements of the development framework ......................... 69
Figure 5-1. The AN/SPS-49 radar system operated by the Royal Australian Navy ............. 75
Figure 5-2. Combat system mind map .............................................................................. 79
Figure 5-3. Detect functionality ......................................................................................... 80
Figure 5-4. Air target information typically provided by radar .......................................... 81
Figure 5-5. Radar-related issues pertaining to air targets ..................................................... 82
Figure 5-6. The indoor radar trainer.................................................................89
Figure 5-7. Static radar system display.............................................................90
Figure 5-8. The anechoic chamber................................................................91
Figure 6-1. A Cessna 182 RG.......................................................................97
Figure 6-2. Cockpit of the U2 aircraft..............................................................100
Figure 6-3. Current and future aircraft of the ADF.................................103
Figure 6-4. Aircraft functionality mind map..................................................106
Figure 6-5. Expanded aircraft functionality mind map...............................107
Figure 6-6. Avionics systems in context with the other aircraft systems......109
Figure 6-7. The avionics systems incorporated into the course..............110
Figure 6-8. Expanded avionics system detail...............................................111
Figure 7-1. Examples of major Australian Defence capital equipment projects........125
Figure 7-2. A mindmap showing the principal components of systems engineering knowledge.................................................................128
Figure 7-3. The systems engineering knowledge structure with a first level of detail........130
Figure 7-4. Systems engineering educational framework............................131