

**THE DEVELOPMENT OF AN INTERNET COURSE AS AN INTEGRAL  
COMPONENT OF FACE-TO-FACE TREATMENT OF MAJOR DEPRESSIVE  
DISORDER (MDD).**

by

John Jacmon MEd Admin (University of New England), MEd (Monash University), Hons BSc (University of South Africa), Hons BA (University of South Africa), BEd (University of Queensland), BSc (University of Queensland), Dip Ed Admin (University of New England), Cert. Comp Stud (WA TAFE).

A thesis submitted in partial fulfilment of the requirements of the degree of

Doctor of Education

The University of New England

June 2007

Approved by \_\_\_\_\_  
Chairman of Supervisory Committee

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

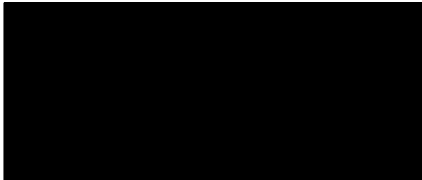
Programme Authorised  
to Offer Degree \_\_\_\_\_

Date \_\_\_\_\_

**Certificate of originality**

**I certify that I am the sole author and that the substance of this thesis has not already been submitted for any degree and is not being currently submitted for any other degrees.**

**I certify that to the best of my knowledge that any help received in preparing this thesis, and all sources used, have been acknowledged in this thesis.**



**Signature**

## ACKNOWLEDGMENTS

The author wishes to express his sincere appreciation to:

Dr Neil Taylor, Senior Lecturer in Science and Technology Education,  
School of Education, Faculty of Education Health and Professional Studies,  
University of New England, Armidale, NSW

Ph (02) 6773 5064, e-mail [ntaylor6@mail.une.edu.au](mailto:ntaylor6@mail.une.edu.au)

Dr John Malouff, Senior Lecturer, School of Psychology, Faculty of Arts,  
Humanities and Social Sciences, University of New England, Armidale,  
NSW

Ph (02) 6773 3776, e-mail: [jmalouff@une.edu.au](mailto:jmalouff@une.edu.au)

Dr Howard Smith, Lecturer, Faculty of Education Health and Professional  
Studies, University of New England, Armidale, NSW

Ph (02) 6773 3109, e-mail: [howard.smith@une.edu.au](mailto:howard.smith@une.edu.au)

Professor Anne-Katrin Eckermann, Associate Dean (Research) Faculty of  
Education Health and Professional Studies, Director Centre for Aboriginal  
and Multicultural Studies CRAMS, Faculty of Education Health and  
Professional Studies, University of New England, Armidale, NSW

Ph (02) 6773 3849, e-mail: [aeckerma@une.edu.au](mailto:aeckerma@une.edu.au)

for their wholehearted and valuable support, whose advice and encouragement  
made this thesis possible.

The author is equally indebted to:

Associate Professor Tom Maxwell, Head, School of Education, Faculty of  
Education, Health and Professional Studies, University of New England,  
Armidale NSW

Ph (02) 2 6773 2583, e-mail: [tmaxwell@pobox.une.edu.au](mailto:tmaxwell@pobox.une.edu.au)

for his constant encouragement and support particularly in the earlier stages of the Doctor of Education course.

## ABSTRACT

The study tested the feasibility of a self-learning interactive online course on Cognitive Behaviour Therapy (CBT) as a component in an intervention for the treatment of participants with mild or moderate levels of major depressive disorder (MDD). The course provided a means for participants to learn cognitive behavioural skills through an interactive website with email and if necessary telephone support by the writer. The intervention included individual face-to-face sessions, which participants arranged as they felt the need during or after completion of the course. The sessions concentrated on the application of skills learnt in the course and overcoming difficulties encountered in learning aspects of the course. Nine participants scoring in the mild and moderate levels on the Beck Depression Inventory (BDI) were selected for the study. The existence of MDD was verified by a clinical interview based on the Hamilton Depression Rating Scale (HDRS). Participants were retested with the BDI on completion of the intervention, the face-to-face phase and three months following the end of treatment. The BDI scores were compared with those of individuals in studies of face-to-face treatment and online treatment only, to identify significant differences in effect sizes or improvement rates. At the same time as the BDI testing participants completed interview questionnaires on the extent to which they were using skills learnt in the intervention and also provided feedback on the treatment process. Case study methodology was used to provide information on changes in functioning as participants advanced through the treatment process. The results are tentative because the study has several limitations including the smallness of the sample, the lack of control groups and the nature of the relationship between the researcher and the participants. Much more research is required before the effectiveness of the intervention can be accepted.

The research questions in the study and tentative responses were as follows:

1. Is an intervention which relies on an online course to train the client in cognitive behavioural techniques and on face-to-face sessions to practise the techniques at least as effective as face-to-face counselling in treating clients with mild to moderate depression? The intervention in the study appears to be as effective as face-to-face counselling in treating clients with mild to moderate depression in CBT skills.
2. If a positive effect is realised from such an intervention, how persistent might this effect be? Treatment gains, whether measured by mean differences or by proportions of completers with subclinical symptoms, persisted for at least 3 months after completion of treatment.
3. Is this intervention more likely to retain clients through to completion compared to other interventions? The present study fares similarly with traditional and online studies of depression treatment. The proportion of completers in the intervention is statistically similar to the proportion of completers in face-to-face studies and other online studies.
4. What are the potential savings of this intervention compared to other interventions? The study found a value of 62%.

The study raises the possibility of increasing the availability of psychotherapy to less affluent sections of the population and enabling psychologists to increase client throughput. An essential difference between the intervention and other online treatment approaches is that the intervention is constructed by the treating psychologist, reflects his or her unique approach and is an integral component of the treatment process. In this way, integrating Internet- and face-to-face-treatment maintains the traditional psychologist-client relationship whilst taking advantage of the strengths of the Internet for facilitating online provision and communication.

## TABLE OF CONTENTS

Certificate of Originality	i
Title	ii
Acknowledgements	iii
Abstract	v
Table of Contents	vi
Chapter 1 – Introduction	
(i) Definition of depression	1
(ii) The extent of the problem	3
(iii) Causes of depression	8
(iv) Statement of the problem and its significance	11
(v) the Internet as a treatment modality	12
(vi) Background to the research questions	15
(vii) The research questions	18
Chapter 2 – Review of the Literature	
(i) Measuring depression	19
(ii) Electroconvulsive Therapy	20
(iii) St John's Wart	21
(iv) Interpersonal Therapy	22
(v) Medication	22
(a) Historical development and current antidepressants	22
(b) Research on antidepressants	23
(c) Medical treatment models	26
(vi) Antidepressant side effects	28
(a) Consumer disquiet	28
(b) The influence of the pharmaceutical companies	30
(vii) Cognitive Behaviour Therapy - Philosophical underpinnings	32

(a) CBT – Theoretical considerations	32
(b) Paradigms	33
(viii) Constructivist paradigms	36
(a) Philosophical constructivism	36
(b) Hermeneutic constructivism	37
(c) Personal constructivism	38
(ix) CBT and constructivism	40
(x) CBT as a process	41
(xi) CBT and Voice	43
(xii) CBT – earlier developments	44
(xiii) CBT - current developments	46
(xiv) Cost effectiveness of CBT	48
(xv) CBT and depression	50
(xvi) CBT and medication	52
(xvii) International expansion of CBT	55
(a) Impetus of CBT in the UK	55
(b) Impetus of CBT in Australia	56
(xviii) Challenges in the development of CBT	57
(xix) The intervention in the study	60
(xx) Self-help	61
(xxi) The Internet	62
(xxii) Internet as a treatment modality	66
(xxiii) Online treatment studies – critical analysis	68
(a) Andersson et al. (2005)	68
(b) Christensen, Griffiths and Jorm (2004)	70
(c) Clark et al. (2002b)	72
(d) Marks et al. (2003)	74
(e) Mihalopoulos et al. (2005)	76
(f) Wright et al. (2005)	77
(xxiv) Implications of detailed studies for the present study	79

(xxv) Computing skills and literacy skills	80
(xxvi) Equity and social justice	83
(xxvii) Considerations in developing an online healthcare site	87
(xxviii) Expanding the availability of CBT through other modalities	89
(xxix) Self-help in combination with face-to-face treatment	92
(xxx) Online treatment	94
(xxxi) Ethical issues and practicalities	99
(xxxii) The future of online healthcare	104
(xxxiii) Methodological considerations	105
(a) Quantitative methodology	106
(b) Qualitative methodology	107
(c) Mixed Method Methodologies	108
(d) Qualitative methods - case study design	110
(xxxiv) Validity	111
(xxxv) The algorithmic basis of the study – a note	113
(xxxvi) Single case study designs	114
(xxxvii) Sampling	116
(xxxviii) Triangulation	117
(xxxix) A note on parametric and non parametric statistics	118
(mx) Validity and reliability of testing instruments	119
(a) The HDRS and the BDI	119
(b) A note on the BDI cut-off score	122
(c) Goldberg Depression Test (GDS)	123
(xmi) Relevance of the literature review to the research questions	123
 Chapter 3 - Methodology	
(I) Introduction	126
(ii) Participants	127
(a) Selection methodology criteria	127
(b) Participant characteristics	129
(iii) Procedures	130

(a) Study design	130
(b) Ethical practice	132
(iv) Instruments	134
(a) The BDI and the HDRS	134
(b) Likert scale questionnaires	135
(c) Case Study data sources	137
(v) Program	138
(a) The research environment	138
(b) The online course	139
(c) An illustration of a course module	141
 Chapter 4 – Findings and Discussion	
(i) The findings of the present study	144
(ii) Comparison studies	145
(iii) Research question 1:	147
(a) Time taken to complete treatment	149
(b) Support	151
(c) Conclusion	153
(ii) Research question 2	154
(a) Progress measured by the BDI and the HDRS	154
(b) Progress measured by the mood monitor and the Goldberg tests	156
(c) Follow-up assessments	159
(d) Conclusion	160
(iii) Research question 3	160
(a) Face-to-face depression intervention studies	160
(b) Internet or computer-assisted depression intervention studies	161
(c) Conclusion	163
(iv) Research question 4	163
(a) Conclusion	164
(v) Note on interrelationships of different measures	164
(vi) Case studies	166
(vii) Completers	167

(a) Aaron	167
(b) Bill	168
(c) Cathy	170
(d) Dee	171
(e) Eric	173
(f) Fred	174
(viii) Non completers	175
(a) Glenda	175
(b) Harry	177
(c) Ilsa	178
(ix) Summary of key participant experience	179
(x) The contribution of the case studies to the research questions	182
(xi) Evaluation of contents and presentation of online course	183
(a) Quality of communication	184
(b) Enrichment material	184
(c) Exercises	185
(d) Live support	185
(e) Motivation to complete	186
(f) Evaluation of questionnaire on the course content	186
(xii) Transfer of skills	187
(a) Stress management	188
(b) Coping with life	189
(c) CBT skills	189
(xiii) Evaluation of the efficacy of the two components of the intervention	190
(xiv) Participant views on the intervention	191
(xv) Summary	194
 Chapter 5 – Summary and conclusions	
(i) Genesis of the study	195
(ii) Restatement of the problem	195
(iii) Major findings and their relevance to the research questions	198

(a) First research question	198
(b) Second research question	199
(c) Third research question	200
(d) Fourth research question	200
(iv) Limitations of the study	201
(v) Recommendations for further research	202
(vi) Final comment	208
References cited	210
Appendices	
(i) Letter to intending participants	249
(ii) Completers' questionnaires on the course	253
(iii) Module 3 – Practising at looking at things differently	257
(iv) Case Study Details	259
List of Tables	xiii
List of Figures	xv
List of Acronyms	xvi

## LIST OF TABLES

Table No	Title	Page No
I	Studies on the reliability of the Hamilton Depression Rating Scale	120
II	Convergent validity of the Hamilton Depression Rating Scale	121
III	Validity and reliability studies of the BDI.	122
IV	Validity studies for the Goldberg Depression Scale	123
V	Completers - ethnicity, gender, educational level, age	129
VI	Non completers - ethnicity, gender, educational levels, age	130
VII	Significance of ethnicity, gender, educational levels, age between completers and non completers	130
VIII	Summary results of current study	145
IX	Key features of chosen studies	146
X	Pre-treatment, post-treatment and follow-up	148
XI	Average number of days per participant to complete face-to-face interventions	150
XII	Mean number of days to complete internet interventions	150
XIII	Support: number of tasks and estimated time devoted to emails and calls to participants	151
XIV	Sessions provided to all participants and completers in face-to-face studies combined and the present study	153
XV	BDI and HDRS means and standard deviations at each intervention phase	154
XVI	<i>t</i> -tests for BDI and HDRS means of completer data at different phases	155
XVII	At 4 weeks into the intervention: Goldberg Scores, reporting periods completed, key events in participant outlook	158
XVIII	Days taken to complete the Internet course	159
XIX	Comparison of completion rates for Internet- or computer-based CBT depression treatment studies including the present study	162

XX	Sessions provided to all participants and completers in face-to-face studies combined and the present study	163
XXI	Product moment correlation coefficients for BDI and other measures at each study phase	164
XXII	Goldberg – product moment correlations of progressive administrations	165
XXIII	Key factors of participant experience	180
XXIV	Post module questionnaire on contents and presentation – mean scores	183
XXV	Questionnaire: Behaviour changes resulting from course – mean Likert scores (0-5) at post-course, post-sessions and follow-up	187
XXVI	Post course questionnaire views on participant satisfaction – mean scores	191
XXVII	Post course questionnaire views on use of skills taught – mean and range of scores	192
XXVIII	Post course and post three months response comparisons on use of skills taught– mean scores	192
XXIX	Free comments by participants on value of intervention	193

## LIST OF FIGURES

Figure No	Title	Page No
1	Study design	133
2	Graph of mean mood monitor scores over nine administrations	156
3	Goldberg scores for individual participants over the course	157

## LIST OF ACRONYMS

Acronym	Full name	Page No
MDD	Major Depressive Disorder	1
APA	American Psychiatric Association	1
NIMH	National Institute of Mental Health	1
DSM-IV, DSMIV-TR	Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision	1
WHO	World Health Organisation	3
DALY	disability-adjusted life years	3
YLD	years lost to disability	3
ECA	Epidemiologic Catchment Area	4
CBT	Cognitive Behaviour Therapy	5
ECT	Electroconvulsive therapy	19
IPT	Interpersonal Therapy	19
BDI	Beck Depression Inventory	19
HDRS	Hamilton Depression Rating Scale	19
GDS	Goldberg Depression Scale	20
NICE	National Institute for Health and Clinical Excellence	20
NCCAM	National Center for Complementary and Alternative Medicine	21
MAOIs	monoamine oxidase inhibitors	22
TCA	tricyclic antidepressant	22
SSRI	selective serotonin reuptake inhibitor	23
GP	General practitioner	23
DTCA	direct-to-consumer advertising	31
REBT	Rational Emotive Behaviour Therapy	45
NNLT	neural network learning theory	47
PBS	Pharmaceutical Benefits Scheme	57
NHMRC	National Health and Medical Research Council	56
CIDI-SF	Composite International Diagnostic Interview Short-Form	69

MADRS-S	Montgomery Asberg Depression Rating Scale	69
ACE-MH	Assessing Cost-Effectiveness in Mental Health	76
PEP	Primary Care Evidence Based Psychological Interventions	76
OECD	Organisation for Economic Co-operation and Development	83
CAI	computer-assisted instruction	92
ISMHO	International Society for Mental Health Online	99
AQA	Automatic Quality Assessment	101
NBCC	National Board for Certified Counsellors	102
IMF	International Monetary Fund	117
PMR	Progressive muscle relaxation	140