

**TOWARDS
THE BIOCHEMICAL NATURE OF LEARNING
AND ITS IMPLICATION FOR
LEARNING, TEACHING AND ASSESSMENT:
A STUDY THROUGH LITERATURE
AND
EXPERIENCES OF LEARNERS AND EDUCATORS**

Delysia Norelle Timm

Submitted in fulfillment of the requirements for the degree of

Doctor of Technology: Education

in the

School of Education

at the Durban University of Technology

Supervisor: Professor Joan Conolly
Co-Supervisor: Professor Edgard Sienaert

Durban, November, 2012.

DECLARATION

I, Delysia Norelle Timm,
declare that this research project
for the degree of Doctor of Technology: Education,
has not been submitted previously for a degree
at the Durban University of Technology,
or any other Institution or University,
and that it is my own work in execution,
and all material contained herein is acknowledged.

DEDICATION

This work is dedicated to

My Lord and Greatest Teacher in my life, Jesus Christ

My husband Kelvin

for creating a safe space at home

with his unending supply of coffee, support and love

during the long days and late nights

I spent in front of my computer

Our sons Evan and Lance

for their wonderful support and patience

ACKNOWLEDGEMENTS

I wish to register my indebted and sincere appreciation to the following;-

My Supervisor Professor Joan Conolly for all the many enjoyable hours we journeyed together, sharing wisdom, insight and support

My Co-Supervisor Dr Edgard Sienaert for being there to provide an answer from my email questions

Prof Nomthandazo Gwele, DVC:Academic, DUT for the “safe space” she provided for me during my study

My extended family for believing in me

My family in the Parishes of Bellair, Queensburgh and Sydenham for their participation, prayers and patience

My colleagues and their students at DUT who participated in my study

My critical readers who spent hours reading and commenting on my work

My special fellow MPR-ites who gave me a listening ear and safe space to learn about researching my practice each Friday afternoon in first Floor of Mariam Bee Building

TABLE OF CONTENTS

Contents

DECLARATION.....	i
DEDICATION.....	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF FIGURES.....	xi
LIST OF TABLES.....	xiii
Abstract.....	1
Prologue.....	3
Chapter 1: Introduction.....	6
What is the background of my study?.....	6
What is my rationale for this study?.....	8
What are the research questions which I have attempted to answer?.....	9
What did I aim to do in my study?.....	10
What do I claim to have done in my study?	10
What have I deliberately not done in this study?	11
How have I integrated the review of literature in my study?.....	11
What original contribution do I believe I have made to the body of scholarly knowledge, evidenced by my study?	11
What is the structure of my thesis? What is the rationale for this structure?.....	12
Chapter 2	14
What Methodological Approach did I use?	14
Introduction.....	14
What was my research approach?	14
What is the central core of overlap of the methodologies?	18

What are the unique contributions of each methodology?	22
With whom did I interact in my study? How did I interact with them?.....	26
How did I mine the data for usable and relevant evidence?	29
What was the first stage of mining data for evidence?.....	31
What was the second stage of mining data for evidence?	32
How did I use frameworks in my research?	32
How do I justify the use of 'anecdotal stories' as research?	37
What do I believe about research?	38
What do I do in my research informed by this set of beliefs?.....	39
What do I believe about 'anecdotal stories'?	39
What is a story?	39
What is an anecdote?	40
What do I believe about my study?.....	41
Conclusion	42
Chapter 3	43
How does learning happen?:.....	43
Deep within my whole biochemical being?.....	43
Introduction.....	43
Is Chemistry everywhere?	43
What have I learnt about learning as change?	44
What have I learnt about head-brain learning?	45
What have I learnt about the chemistry of emotions?	48
What have I learnt about the chemistry of memory?.....	53
What have I learnt about the chemistry of gut-brain learning?.....	55
What have I learnt about the chemistry of the heart-brain learning?	59
What have I learnt about learning related to human beliefs?.....	64
What have I learnt about the value of energy in learning?.....	66

What have I learnt about human expression and communication?	73
How do I relate the science of learning to what happens in the classrooms?	76
Conclusion	77
Chapter 4	78
How does learning happen?:.....	78
My personal learning story	78
Introduction	78
What was my context of my schooling?.....	79
Who influenced my learning in early childhood? How did I express who I was in those photos of my early years? What were the gestures that I had internalised over the years?	82
What did this acceptance look like at High School? What type of relationships did I have with my peers in the High School classroom?	91
What were the challenges I faced during my undergraduate years? What did I learn from these challenges?.....	97
What did I learn whilst working in the Chemical Industry?	104
What did I learn as a teacher within a Technikon?	105
What have I learned from my post-graduate journey?	109
Conclusion	114
Chapter 5	115
How does learning happen?:.....	115
My Spiritual learning story	115
Introduction	115
What really matters to me? What do I care passionately about? What kind of difference do I want to make in the world?	115
What are my values and why?.....	118
What is my concern? Why am I concerned?	119
What evidence do I have for my concern?.....	120

How did I discover that God loves me?	120
What have I done about my concern?	128
How did studying theology influence my <i>whole-being-learning</i> of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?	130
How did participating in liturgical dance influence my <i>whole-being-learning</i> of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others? ...	138
How did participating in floral arranging influence my <i>whole-being-learning</i> of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others? ...	141
How did I use Bible Studies to influence the <i>whole-being-learning</i> of Christian Spirituality of others? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others? ...	146
How did I use Quiet Days to influence the <i>whole-being-learning</i> of Christian Spirituality of others? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others? ...	149
Conclusion	153
Chapter 6	154
How does learning happen?:.....	154
My Educational learning story	154
Introduction	154
What is my concern? Why am I concerned?	154
What really matters to me? What do I care passionately about? What are my values and beliefs? What kind of difference do I want to make in the world?	159
How have I created a Safe Space for the development of a Community of Practice?.....	163
How does the nurturing of relationships influence <i>whole-being-learning</i> ?	166
How does recognition of talents and gifts influence <i>whole-being-learning</i> ?	169

How does the integrating of knowledge influence <i>whole-being-learning</i> ?.....	171
What is the extent of me living out my values and creating a safe space for <i>whole-being-learning</i> ?	173
Conclusion	181
Chapter 7	183
How does learning happen?:.....	183
Evidence in the lived experiences of	183
educators and learners.....	183
Introduction	183
What is the evidence for my concern that students do not believe in themselves and how their emotional issues get in the way of their <i>whole-being-learning</i> ? ...	183
How do my emotional issues get in the way of my whole-being-learning?	184
So Delysia, are you really Just Not Good Enough- JNGE?	185
What evidence do I have of my students who do not believe in themselves? What did I do to influence their belief in themselves?	188
How did Sherlien's JNGE influence her whole-being-learning?	189
How did Ingrid's JNGE influence her whole-being-learning?	197
What evidence do I have of students not actively engaging with the teachers and with the subject matter? What did the teachers do? What evidence do I have of my influence? What evidence do I have of the teachers influence?	201
How did Ivan use games in his classroom to influence his students whole-being-learning?	201
How did Derrick use games in his classroom to influence his students whole-being-learning?	206
How did Dorinda use games in her classroom to influence her students whole-being-learning?	211
How did Anisa use games in her classroom to influence her students whole-being-learning?	216
Conclusion	221

Chapter 8:	224
How have I shared my study of my understanding of learning as a biochemical process in the public space?	224
Introduction.....	224
When did I start making my voice public?.....	224
What is the most recent spaces where I made my voice public?.....	236
What are my reflections?	240
Conclusion.....	240
Chapter 9: Conclusion.....	241
What do I see as future explorations following on my study?	241
What are my final reflections?	242
BIBLIOGRAPHY	245
APPENDICES	275
Appendix A: Template of consent form.....	275
Appendix B: Schedule of Participants (SOP).	278
Appendix C: Written responses of the participants.....	285
Appendix D: An exemplar of a completed framework for one concern for a lecturer	304
Appendix E: B Theology Degree curriculum outline	305
Appendix F: Copy of my written text I prepared for a sermon	306
Appendix G: Programme for Quiet Day	309
Appendix H: handwritten story of JNGE	311
Appendix I: Sherlien’s Powerpoint presentation	314
Appendix J: Programme of the Mini- Congress of Society of Medical Laboratory Technology of SA (SMLTSA) held in February 2002	317
Appendix K: Testimonial for Sherlien written by D Timm.....	319
Appendix L: Dorinda’s Games and Poster Assignment	320

Appendix M: From designing games to understanding learning: what happens when we play? Powerpoint presentation 323

Appendix N: Challenges of Structure, Environment and Process facing a part-time doctoral student in a new UoT: a critical autobiographical view. Powerpoint Presentation 327

LIST OF FIGURES

Figure 1: Venn diagram showing an Analysis of Methodologies – adapted from (Hamilton <i>et al.</i> 2008; Pinnegar and Hamilton 2009).....	19
Figure 2: my birth certificate	81
Figure 3 : Preschool going age in the 1960's- I am on the extreme left.....	83
Figure 4 :Preschool going age in the 1960's- with schoolgoing siblings - I am in the front.....	83
Figure 5: Sub A report: inside.....	86
Figure 6: Sub A report: outside	87
Figure 7 Std 1 class.....	88
Figure 8: Std 1 report: inside	89
Figure 9: Std 1 report: outside.....	90
Figure 10 std 8 class	92
Figure 11: Std 8 school report	93
Figure 12 Std 10 class.....	95
Figure 13: Matric results.....	96
Figure 14: UDW response to initial application.....	98
Figure 15: Department of Indian Affairs response.....	99
Figure 16: University of Natal response	100
Figure 17 Senior Chemistry students in study room.....	102
Figure 18 Delysia in study room.....	102
Figure 19 peers outside chemistry building	102
Figure 20: working in lab	102
Figure 21 Coloured mentors.....	103
Figure 22 my family at graduation	103
Figure 23 Graduation- my mother 4th year teaching diploma	103
Figure 24 graduation stage	104
Figure 25: Only woman lecturer	105
Figure 26: My family at my MSc graduation	112
Figure 27: Delysia delivering her first sermon as ordained priest in Church.....	133
Figure 28: Delysia raising hands in dance worship	139
Figure 29: Delysia using her whole body in dance	140
Figure 30: Team approach to floral arranging	145

Figure 31 thinking and planning the floral arrangement	145
Figure 32 joy expressed by all on completion of the floral arrangement.....	145
Figure 33: women draping the cross	151
Figure 34: women seated around the cross in meditation	151
Figure 35 I am seated on left under the painting	151
Figure 36: women in quiet reflection.....	152
Figure 37 :Venn diagram of whole-being-learning, Timm 2012.....	162
Figure 38 Video Clip of staff Development workshops held from march 2001 until sept 2001 http://www.youtube.com/watch?v=1zku3e7qE8Q	177
Figure 39 Institutional Symposium held September 2001 <a href="http://youtu.be/-
bk97Q3w8Do">http://youtu.be/- bk97Q3w8Do	179
Figure 40 Development workshop for staff from a different institution http://youtu.be/qi1W2cKTMpE	180
Figure 41 Derrick's students playing board games.....	209
Figure 42 students engaged in question and answer session.....	209
Figure 43 students reading the textbook to settle a dispute about an answer	209
Figure 44 More board games	210
Figure 45 colourful boardgames integrating four subjects.....	210
Figure 46 engaging in more game playing	210
Figure 47 writing out an explanantion during the playing of a game	211
Figure 48 At the AERA Self-study SIG meeting. from l to r: Wendy Rawlinson (SA), Kathleen Pithouse-Morgan (SA), Delysia Timm (SA), Joan Whitehead (UK), Theresa Chisanga (SA), Jack Whitehead (UK), Daisy Pillay (SA), Jackie Delong (Canada), Lesley Coia (USA).....	238

LIST OF TABLES

Table 1: Interpretation of Non-Verbal sounds (Timm, 2012)	30
Table 2: Adaptation of Action Research Framework: my Spiritual learning (Timm 2012)	34
Table 3 : Adaptation of Action Research Framework: my educational learning	35
Table 4 : Original Johari window Framework	36
Table 5 :Modified Johari Framework for the interpretation of data (Timm, 2012)	36

Abstract

In this study I have explored scientific insights towards establishing how the biochemistry of the human being could have a significant impact on human learning in a number of different ways. I have discovered that the biochemistry within the whole human being is triggered by the molecules of emotion occurring in a psychosomatic network active throughout the whole being. The molecules of emotion are neuropeptides such as endorphins, linked to their receptors, such as opiate receptors. This triggering of the molecules of emotion constitutes the pleasure principle which enables and encourages learning. In addition, the growth of myelin ensheathing all the neurons, through a process of myelination, also informs human learning biochemically. These biochemical processes make human learning 'active'. These biochemical processes also constitute a network of subtle energies operating in the viscera of all human beings, and so account for the anthropology of learning, viz. what is common to all human learning, regardless of ethnic group, language, economic circumstances, religious belief system, level of education, social class, age, gender, rural or urban location, *inter alia*.

I have then drawn on my own learning experiences – my autobiography - and the experiences of others – an autoethnography - for evidence of the operation of the biochemistry in my and their learning. I have presented evidence of the emotions of joy, love and fun activating *whole-being-learning* that occurs in all of personal, spiritual and educational human learning.

I have described my living spiritual and living educational theory as one where human learning happens when there is joy-filled love and love-filled joy within a safe community of practice. Within this safe community of practice, at least three aspects are argued to be features of *whole-being-learning*:

- the relationships between the learners, their teachers and the subject are characterised by joy-filled love and love filled joy.

- the talents and gifts of both the learners and the teachers are explored, celebrated, and used for inclusive benefit.
- the knowledges of, about, and between, learners and teachers become integrated and coherent.

My original contributions to the body of scholarly knowledge evidenced by my study include the following :

- I have established the link between human learning as a biochemical process and the efficiency of games as a learning tool, thereby showing the link between learning and fun.
- I have explored the holistic, organic intrinsic connections between personal, spiritual and educational human learning.
- I have contributed to a growing understanding of the study of self as a subject and object in terms of my ways of human knowing (my epistemology), my ways of being human (my ontology) and my values (my axiology) which (in)form my attitudes of joy-filled love and love filled joy in all that I do.

Prologue¹

Sitting on my verandah with the strong February afternoon sun shining brightly on the rose bushes around me, I am amazed. Amazed at the energy of the sunshine, amazed at the beauty of the rose bushes, amazed at the talent of Kelvin, my husband, meticulously tending his roses, amazed at the opportunity to just sit for a few minutes and reflect.

In fifty years, opportunities to enjoy - peacefully - the splendour of all of God's creation are rare. This peaceful 'just sitting' in wonderment in God's presence is something I have learnt to value even more¹ in the past two years since being ordained as a priest.

This 'just sitting' in splendour provides a balance for 25 years spent in the often tumultuous kaleidoscope of the university, first as a Chemistry Lecturer and latterly as an Academic Developer.

What are the light and bright moments in this kaleidoscope? There is light when my engagements with academics and students result in learning and participation in communities that bring joy and a sense of achievement. There are joy and light when I can share my knowledge with other academics at weekly Transformative Education/al Studies (TES) sessions on Friday afternoons, share my knowledge at annual self-study seminars and workshops, and share my knowledge at national and international conferences with others as we together "reach into the sleeping heart of the text, so as to awaken life in it and make it beat" (Jousse 2000:108).

I am reminded that as I gaze on the sun, I am not alone on this research and learning journey. I am influenced by many of my colleagues, who have the ability to "[arouse] in [me] a conscious realisation of the living and moving beauty of a dawning day" (Jousse 2000:107). My colleagues share their passion and excitement for learning, teaching and assessment with me. They help me realise the significance of the Games for Learning that we developed in the Effective Learning Centre. We have many exciting and challenging conversations as we share

¹ My Prologue is a copy of my presentation for the American Educational Researchers Association (AERA) conference that I attended in April 2012. I presented as part of the Transformative Education/al Studies (TES) symposium which was chaired by Joan Whitehead, with Jack Whitehead as the discussant.

understandings of the process of learning and engage in self-study methodologies of research (Whitehead 2009a; Samaras 2011).

I have observed that I learn when I love what I am doing, when I am encouraged and supported by people who love me. I believe that when I am doing what I love, I feel a sense of achievement, relief, and joy. All my “molecules of emotion” (Pert 1999) that are hard-wired for pleasure then interact and vibrate synchronously. In this I believe that I am typical of all human beings.

Learning is biochemical because the expression of joy and pleasure throughout the body from the heart, the stomach, the head, the hands and the feet, sets the “molecules of emotion” (Pert 1999), which are all the neuropeptides in the neurons, into motion across the synapses and along the dendrites (Gershon 1998; Goswami 2004; Fields 2005; Lipton 2005; Schulte-Korne *et al.* 2007; Fields 2008b; Stewart and Williamson 2008). As I grow in consciousness through the “widely distributed psychosomatic network of communicating molecules” I experience a change in my bodymind and hence my learning (Pert 2006:5). Which is why as an Academic Developer I create educational environments in which the pleasure principle operates, in which learning occurs and in which new understandings develop. I provide opportunities for learners to experience the leading out of their imagination, creativity and heart, to feel alive and fed in what they are doing. It is from “knowing more about [myself] as [a] teacher and teacher educator [that I have been] changed...” (Pithouse *et al.* 2009)

So as I reflect, under the sun, on my transformative journey as a Doctoral Researcher and Academic at a University of Technology in South Africa, I am reminded that

“doctorates are very personal qualifications...[candidates have] a sense of ownership... the thesis represents a piece of work in which the author has belief. The belief relates to its merit and wider relevance” (Trafford and Leshem 2008:4)

My transformative journey has compelled me to get to know and value my origins, has developed within me a sense of authority in my work and enabled me to identify who I am in relation to other academics and researchers (Jousse 2006). During my research, I have been “jolted out of complacency” (Pithouse *et al.* 2009) and

experienced both the social benefits and the “direct contribution to [my] own self-realisation” (Mooney 1957:155).

As I journey, I remember too that “the world does not exist to be recorded in the pages of a book. The world exists to transform itself, through the book or, better still, without the book, into living and self-creating thought” (Jousse 2000:109).

Chapter 1: Introduction

I think the TRC (Truth and Reconciliation Commission)
was also about making the private public.
I think that only if we attempt this pouring out of personal feeling and thinking
into the public domain,
will the new public become possible.
We cannot tell what kind of public it will be,
but we do need to release more and more personal detail
into our public home
to bring about a more real human environment:
more real because it is more honest, more trusting, and more expressive.

Njabulo Ndebele²

What is the background of my study?

I am a Coloured South African woman. I was born in 1961 when Apartheid was 13 years old. While my study is not directly about political oppression and its effects on learning, the factor of apartheid in the life of any South African cannot be ignored. I believe that Apartheid and its effects will visit us at least “unto the third and fourth generation” (RSV 1975:Exodus 34v7 and Lamentations 5v7) which is why I find it important to make my private voice - as a 50-something year old, Coloured woman, who has lived and worked in South Africa all my life - public.

I believe that my private voice is important because it reveals not only oppression of various kinds, but also, and perhaps even more importantly, my study reveals how I and others have achieved *in spite of apartheid* and, what is more, seen how all life events, political and otherwise, oppressive or otherwise, impact on learning primarily as biological processes before they become sociological. I believe my private voice reveals an understanding of learning which is anthropological, and so can apply to all learners anywhere and through all time, and as such, deserves to be made public.

Over the past 20 years, I have noted the following, and find the situation deeply concerning.

² Dr Ndebele was awarded an Honorary Doctorate at Durban University of Technology in 2011. This is an extract from the graduation programme.

1. The rate of success in higher education in South Africa is worryingly slow (Scott 2007). A recent study at the DUT revealed an overall student throughput of 23.60% (Pillay 2010). In Pillay's study, throughput is calculated by tracking a cohort of students registering for the first time in a given year, and completing the qualification in regulation time. In DUT's case, regulation time is mostly three years. The graduation rate overall in the South African universities of technology increased in the period 2004 to 2007 from 16% to slightly more than 20% (CHE 2009). Graduation rate is calculated "by dividing the total number of qualifications awarded at an institution by the total number of students enrolled in the same year" (CHE 2009:34). This figure provides only a rough measure of the number of graduates staying in the system and does not account for changing enrolments and different duration of programs. I believe that there is a need to find an approach that will improve both the rate and quality of student learning and increase the rate of student throughput and graduation in South Africa.
2. In South Africa, teachers in higher education are increasingly despairing because of learner apathy, disinterest and failure. The learners are faced with a system of education where the language of instruction is possibly their second or even third – or more – language – in effect, some learners are learning in a foreign language. The teachers are faced with increased workloads due to increased student enrolments – from 425 000 students in 1994 to 761 000 students in 2007 (CHE 2009). Teachers are faced with demands for increased research output and the demands of increased administrative responsibilities. In addition, both teachers and learners, in some cases, are experiencing changes in institutional cultures of learning due to the merging of higher education institutions, and the merging of departments within universities. The teachers and the learners need to find an approach and a space where they can negotiate their learning to motivate each other (Johnson 2006).
3. The sociological demographics of higher education learners are changing on a scale and at a rate which is unprecedented. There are more students in higher education from working class and rural backgrounds than ever before. Black African student enrolment has increased from 40% in 1993 to 67% in

2007 (CHE 2009; CHE March 2010). There is a need to find an approach that will motivate everyone regardless of their sociological origins and influences.

What is my rationale for this study?

I believe that if we wish to address the concerns I have noted above, we have to find a way to make learning a positive and self-rewarding exercise for all learners.

In the last 20 years, as a teacher in higher education, I have observed learners learning, and note that those engaged in 'active learning' (viz. "learning by doing" (Dewey, 1938)), learn better. In addition, when I have worked with educators and learners to develop learning materials that promote active learning, I have experienced how learners who become emotionally happily involved have been motivated to learn. I have observed that when learners become enthusiastic, fascinated, and intrigued, they become engaged in, and contribute more, to their own learning, and then realise that learning can be self-rewarding. I have also observed, especially in children, that self-rewarding learning happens when they use their whole beings and are having fun and when they compete and collaborate with each other. Yet, in higher education learning is not often associated with having fun and with activity experienced through the whole being.

Current understanding of active learning (Bonwell and Eison 1991; Angelo 1993; Allen 1995; Cooperstein and Kocevar-Weidinger 2004; Massey *et al.* 2005; Collins *et al.* 2007; Boyas 2008) does not account for the nature and operation of the activity in learning, or what constitutes the kind of activity that makes learning happen effectively. Currently, perceptions about learning are that learning is *primarily psychological*. Educational and cognitive psychology (Piaget 1926; Bruner 1977; Gagne 1985) multiple intelligences (Gardner 2006) and emotional intelligence (Goleman 1995) are cited as important factors at the learning and teaching interface. Reflection on learning behaviours (Schon, D 1983a) reveal that motivation is a common feature in all instances (Malone and Lepper 1987; Garris *et al.* 2002; Gom 2009) but that people are motivated by different things (Huizenga *et al.* 2009; Chang and Chang Winter 2012). *I argue that there must be something amongst all these factors that motivate learning is common to everyone.*

Since 2004, some of us at DUT - educators and learners - have been engaged, and continue to be engaged, in deliberately designing and using various forms of emotionally-informed active learning exercises including game and poster construction. I have observed that everyone involved, even those who are initially sceptical and disinterested, become motivated and work longer and with greater commitment and achieve greater success. I have also observed that the learners enjoy the learning process, even when it involves what is commonly perceived as boring and tedious learning content.

I have found myself wondering “What then is active learning, and what is it about active learning, learning by doing, that makes it work?” To address this question, I considered it necessary to explore the possibility that learning goes beyond its psychology, and is rooted in human biochemistry (Gershon 1998; Pert 1999; Fields 2005; Pert 2006; Fields 2008b). I believe that such an understanding could inform educators in higher education with new insights about the nature of learning, and that such an understanding and such insights might inform and improve teaching and assessment practice, so that learners find learning a pleasurable and self-rewarding exercise. I believe that learners who enjoy learning are more likely to succeed in their studies at university, and in their careers and lives beyond the university.

What are the research questions which I have attempted to answer?

My principal research question is *How can I account for my understanding of learning as a biochemical process?*

Two further questions are :

1. What scientific evidence is there for a biochemical basis for learning?
2. What empirical evidence is there in the classroom that human learning occurs biochemically?

During the course of my study I realised that the title of my thesis could be improved if it was stated as “*How do I account for my understanding of learning as a biochemical process?*” My request was refused by the Faculty Research Committee on the grounds of the fact that a thesis cannot be titled with a question. I was most

disappointed. However I feel I have compensated for this disappointment by using questions as sub-headings throughout my account of my understanding of learning as a biochemical process.

What did I aim to do in my study?

In my study, I aimed to

- explore the biochemistry of human beings as a factor in human learning;
- demonstrate the possibility of the biochemistry of human learning through my own lived experiences, and the lived experiences of others, of active learning.

What do I claim to have done in my study?

In my study ...

- I have explored the anthropology of learning, by exploring an understanding of human biochemistry as a common denominator in human learning;
- I have investigated how being “hardwired for pleasure” (Pert 1999) increases learners’ engagement in their learning when play and fun during learning, teaching, and assessment in Higher Education are introduced.
- I have illustrated through the lived experiences of a number of learners, myself included, the role and operation of positive emotion-driven learning in our learning experiences of different kinds – personal, spiritual and educational.
- I have identified the role of ‘joy-filled love and love-filled joy’ in my learning processes, and the learning processes of others.
- I have suggested that the learning that lacks love and joy does not motivate and engage learners.
- I restrict my focus on the significance of social, economic, political oppression as factors in learning, because their inclusion would make my study unmanageable at this level.

What have I deliberately not done in this study?

In this study I have not ...

- included any laboratory or biological analysis in the determination of learning as a biochemical process;
- investigated teaching and learning at any other institutions except those recorded;
- attempted to explore the scholarship of motivation *per se*, beyond recognising its role in learning;
- implied that psychology and sociology of education have no place in education;
- explored to any significant degree the implications in my study of the affects of social, economic, political oppression;
- made claims about specific ethnic cultures or gender;
- explored personal and group identity as factors in learning.

All of these deliberate exclusions from my study imply that they need investigation at another time. I deal with this in the Conclusion of my study.

How have I integrated the review of literature in my study?

Mine is a multidisciplinary study. The multi-disciplinarity of my study has required that I read in a number of disciplines and directions. Because of this, I have integrated my literary references throughout the study where such references are pertinent (Bruce 1994:144).

What original contribution do I believe I have made to the body of scholarly knowledge, evidenced by my study?

I believe that I have identified the link between learning as a biochemical process and the efficiency of games as a learning tool, and thereby shown the link between learning and fun.

I believe that I have shown that learning is simultaneously an emotional and intellectual process.

I believe that I have found a new role for educators in addition to “the sage on the stage” (King 1993) and “the guide on the side” (King 1993), viz. the designer of *whole-being-learning* opportunities - an architect of *whole-being-learning*.

I believe that I have made a contribution to self-study in showing how I have focused on developing my ways of knowing, my ways of being, and my values and attitudes using my personal voice.

I believe that I have made a contribution to a growing understanding of the study of self as subject and object in a study (Jousse 2000:26).

Using myself as subject and object of my study, I believe that I have shown coherence between ways of human knowing (epistemology), ways of being human (ontology) and ways of human valuing which translate into human attitudes (axiology).

I believe that I have demonstrated how to bring people to a knowing, an awareness of their spiritual and creative selves.

I believe that I have made a unique contribution to personal, spiritual and educational learning showing an holistic, organic relationship between them through the intrinsic connections between personal, spiritual and educational learning.

I believe that I have shown how methodologies designed and used by others can be adapted and modified to personal use in different contexts.

What is the structure of my thesis? What is the rationale for this structure?

I begin my thesis in Chapter 1 with the background, rationale and questions investigated in my study. I briefly state what I have set out to achieve and what I actually achieved as my original contribution to knowledge.

I provide in Chapter 2 an analysis of the methodologies that I have used in my study in order to promote a clear understanding of the diversity of approaches I employed in undertaking my research.

I include in Chapter 3 an account of my understanding of learning as a biochemical process by examining the scientific literature presented out of the lived experiences of a number of scientists engaged in scholarly studies of human biology, physiology and human expression.

In Chapter 4 I share my autobiography, and an auto-ethnography, from the perspective of, and through the lens of, my personal learning in order to provide an account of critical incidents that illustrate my understanding of learning as a biochemical process.

In Chapter 5 I provide an account of my evidence of the biochemical nature of learning from the perspective of spiritual learning, and through a spiritual lens, as I study myself as a learner and teacher in my spirituality which is as a Christian.

In Chapter 6 I provide an account of my evidence of the biochemical nature of learning from the perspective of educational learning, and through an educational lens, in a university of technology. I describe the concept of *whole-being-learning* as manifested in a safe community of practice with nurtured relationships, recognised talents and gifts and integrated knowledge.

In Chapter 7 I provide evidence of my understanding of the biochemical nature of learning through the lived experiences of teachers and learners with whom I have engaged in a university of technology.

In Chapter 8 I provide a chronological account, spanning the past decade from 2002 until 2012, of how I have shared my understanding of learning as a biochemical process in various public spaces in local and international conferences and symposia. In my reflection I provide an account of my own *whole-being-learning*.

I conclude my thesis in Chapter 9 by sharing a summary of my original contributions to knowledge as well as posing new questions for future studies which will explore the understanding of learning as a biochemical process and the implications thereof.

I have presented a Bibliography and not a list of References. My Bibliography reflects a wide spectrum of readings that I have explored as part of this doctoral journey.

In both the Appendices and enclosed DVD's, I have included a Schedule of Participants (SOP) in which I have listed all the audio- and video-recordings that I have referred to in my thesis. I have included a selection of working documents in the Appendices to provide my readers with an indication of my *modus operandi* when I was mining my 'data' for 'evidence'.

Chapter 2

What Methodological Approach did I use?

The great mistake we have made in education
is to have adopted only the teacher's point-of-view,
so the perspective of our psychology is that of the teacher
Marcel Jousse

Introduction

In this chapter I provide an account of the variety of methodologies I use to answer my research question “*How can I account for my understanding of learning as a biochemical process?*” In my study I aimed to demonstrate the possibility of the biochemistry of human learning through my own lived experiences, and the lived experiences of others, of active learning.

I also describe the methods I used to generate my data and to mine my data for relevant evidence. I include the modifications I have made to the various frameworks I have used to compile my report.

What was my research approach?

I chose a qualitative research approach as the focus of my evidence is in “lived experiences”(Denzin and Lincoln 1994) both my own and those of my research participants. I have chosen not to use a quantitative approach as I did not want to use a biochemical laboratory for my study, but rather “laboratories of awareness” (Jousse, 2000:27) in which

... the experimenter is simultaneously the experimented. Man is no longer ‘this unknown’: [s]he becomes [her] own discoverer. The only person one can know well, is oneself. But to know oneself well, one must observe oneself thoroughly. The true laboratory is an observation laboratory of the self, so called because it is difficult to learn to see oneself. That is why it is necessary to create what could best be called ‘Laboratories of awareness’. While we will never be able to step outside of ourselves, yet, thanks to Mimism, everything that is re-played through us, is within us. All science is awareness. All objectivity is subjectivity. The true Laboratory is therefore the Laboratory of the self. *To instruct oneself is to develop oneself*. Only the individual can know [her]self, whence today the ever-increasing awareness of the role of *living memory* and of its omnipresent adjuvant, *rhythm* (Jousse, 2000:26/7).

In short, I am providing an account of my understanding of learning as a biochemical process out of my “lived experience” and the “lived experiences” of my research participants.

In my exploration of “*How does learning happen deep within my biochemical being?*”, I provide evidence from scientific literature accounting for learning as biochemical process out of the lived experiences of a number of scientists engaged in human biology, physiology and human expression.

I subsequently provide an account of my understanding of learning as a biochemical process, using a series of “perspectives” (Jousse, 2000:99 and 242, *inter alia*) and “lenses” (Singer 1995:5). I include evidence of the biochemical nature of learning from the perspective of my own personal learning and through a personal lens, from the perspective of spiritual learning and through a spiritual lens, and from the perspective of educational learning and through an educational lens. I provide evidence of my learning from three perspectives - personal, spiritual and educational - since they are integral to my lived experience as a family member, as a member of a spiritual community and as a member of an educational community of practice. These perspectives have influenced my life and my thinking. I look at my learning and the learning of others through multiple lenses to gain deeper and richer insight as I point outwards to the world and to other people. My study is thus significant for teachers and learners not only in education and specifically in university classrooms but also in the teaching and learning of spirituality in our communities and society.

Throughout I will try to work with only what I truly know, by which I mean, with that which I have experienced, directly or, if that is not the case, with what I have read and been able to verify, and not with what has been written about it and for which I can find no personal confirmation (Sienaert, 2006:2).

My lived experience includes many interactions that are dynamic and energy-filled. I support the view of Jousse that to know is

to become conscious in a dynamic, live fashion (...) in both an integrated and anthropological [manner] (Jousse 2006:18).

I become conscious, become aware, bring-into-consciousness through a continuous process that demands ceaseless study in the “living reality of the human beings

themselves” (Jousse 2006:22). The living reality of humans is their complexity of movement and play. Through my entire body, I “receive, integrate, conserve and re-play in ex-pression, the reality of human experience in ways which are dynamic, concrete and whole” (Jousse 2006:175).

I am thus investing in my studies at both a personal and profound level and can identify with Ross Mooney in “*The Researcher Himself*” in his assertion that

Research is a personal venture which, quite aside from its social benefits, is worth doing for its direct contribution to one’s own self-realisation. It can be taken as a way of meeting life with the maximum of stops open to get out of experience its most poignant significance, its most full-throated song (Mooney 1957:155).

I make meaning of my personal “lived experiences” as a learner and teacher as I explore approaches that enable me to know myself. Jousse in his book *Be Yourself* (2006) reminds me that as I know and value my own true origins, I am in a position to have authority in my work and to identify who I am in relation to others. In order to know myself both as a learner and as a teacher, I observe myself. I observe what is real before me and within me in an analytical and rigorous manner from my early years of childhood, my schooling until my present learning in adulthood.

As a practitioner researcher, I am encouraged by Dadds and Hart (2001) to be inventive in my methodology:

More important than adhering to any specific methodological approach, be it that of traditional social science or traditional action research, may be the willingness and courage of practitioners – and those who support them – to create enquiry approaches that enable new, valid understandings to develop; understandings that empower practitioners to improve their work for the beneficiaries in their care. Practitioner research methodologies are with us to serve professional practices. So what genuinely matters are the purposes of practice which the research seeks to serve, and the integrity with which the practitioner researcher makes methodological choices about ways of achieving those purposes. No methodology is, or should be, cast in stone, if we accept that professional intention should be informing research processes, not pre-set ideas about methods or techniques...(Dadds and Hart 2001:169).

Furthermore, Kincheloe reminds me that bricolage, a multi-method mode of research,

exists out of respect for the complexity of the lived world (...) it is grounded on an epistemology of complexity (...) construct[ing] a far more active role for

humans both in shaping reality and in creating the research processes and narratives that represent it (Kincheloe 2005:324 - 325).

In my study, I avoid monological knowledge and unilateral perspectives on the world as they “fail to account for the complex relationship between [my] material reality and [my] human perception” (Kincheloe 2005:326). In my study I bring at times an “insider” perspective (Jousse 2000:9), at times an “implicated” perspective (Stoller 1997), and other times an “outsider” perspective (Stoller 1997). In my research “I” am thus both the subject and the object (Jousse 2000:26). I bring an *insider* perspective when I am studying my own *whole-being-learning*. I bring an *implicated* perspective when I am studying the *whole-being-learning* of my fellow-parishioners and my colleagues as my students. I bring an *outsider* perspective when I am studying the *whole-being-learning* of the students of my colleagues.

I use a number of different qualitative methodologies of self-study (Hamilton and Pinnegar 1998; LaBoskey 2004; Hamilton *et al.* 2008; Pithouse *et al.* 2009) critical autobiography (Taylor, PC and Settelmaier 2003; Taylor, PC and Afonso 2009) autoethnography (Ellis and Bochner 2000; Baker 2001; Ellis 2004) informed by values driven action research living theory methodology (Whitehead and Huxtable 2008; Whitehead 2009a; Whitehead 2009b; Whitehead 2009c) transmitted in the mode of narrative inquiry (Clandinin and Connelly 2000). My research design has focussed on my story (narrative inquiry), on my self within a larger context (critical autobiography and autoethnography), my self in action within educational contexts (self-study) and my self in action informed by values of my lived self (action research living theory methodology).

I present a graphic summary, in Venn diagram format, (see Figure 1) to illustrate the convergence and divergence of the five methodological components of my study. (Hamilton *et al.* 2008; Pinnegar and Hamilton 2009). My Venn diagram is different to those presented by Hamilton *et al.* (2008) and Hamilton and Pinnegar (2009) in that I have included Action Research Living Theory Methodology (Whitehead 2009a; Whitehead 2010a). As I engaged in my research, I noticed a blurring of the boundaries of the five methodologies. I have found that there are instances where these methodologies overlap and concur particularly in respect of *critical reflection, common places, use of narrative/story, the position of the “I” and the commitment to improvement*. I discuss how I have engaged with each of these commonalities and

similarities in my study before discussing the unique contributions of each methodology to my study.

What is the central core of overlap of the methodologies?

I use critical reflection of my practice as I reflect on critical incidents of my own active learning in my critical autobiography and self-study to make claims about my understanding of my own learning and teaching and the learning and teaching of others (Schon, DA 1983b; Mitchell and Weber 1999; Pinnegar and Hamilton 2009; Pithouse *et al.* 2009). I engage in critical reflection of my practice in my autoethnography and action research self study living theory methodology as I ask questions for clarification or explanation. During my interactions with members of my local Anglican Churches teachers and learners at the Durban University of Technology, I critically reflected on how parishioners and students and I were motivated to learn when we became emotionally involved, having fun and experiencing joy in our learning. I experienced a contradiction in that learning in general, and spiritual learning, and educational learning in particular, are not associated with having fun (Rieber 2001; Rieber and Matzko 2001; Mungai and Jones 2002). I observed that there is a lack of understanding of the **activity** experienced during active learning, or rather during learning occurring in the whole being – body, mind and spirit. My study has been provoked by this contradiction and lack of understanding of the nature and operation of the **activity** in active learning. In my study I explore the **activity** in active learning as the biochemical change (learning) happening throughout the whole being of the learner.

I critically reflect on the work of, amongst others, the biophysicist, Candace Pert (1999; 2006; 2008), the neurobiologist, Michael Gershon (1998; 1999a), and the cell biologist, Bruce Lipton (2005) and the educationist, anthropologist, linguist, mathematician, biblical scholar, ethnologist, psychologist, Marcel Jousse (2000; 2004; 2005; 2006), to gain an understanding of learning as a biochemical process. I thus coined the term '*whole-being-learning*' as an expression of "bio-chemical change/learning" that happens when humans engage in learning. I use the term *whole-being-learning* throughout my thesis from this point on, to express "biochemical change/learning that happens when humans engage in learning".

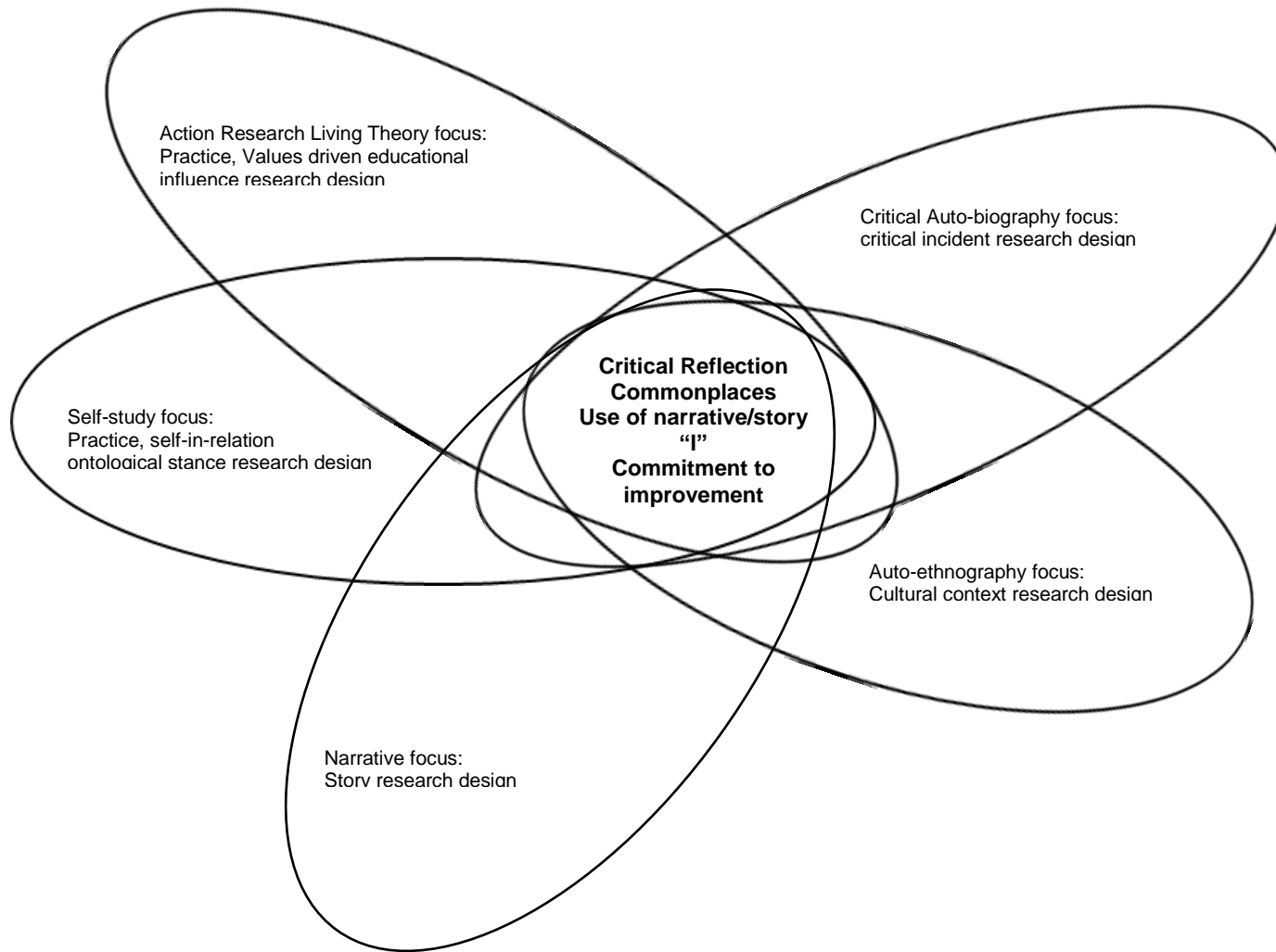


Figure 1: Venn diagram showing an Analysis of Methodologies – adapted from (Hamilton *et al.* 2008; Pinnegar and Hamilton 2009)

In my study, I give an account of my understanding of learning as a biochemical process from my '*whole-being-learning*' experiences during the period 1969 – 2011. My focus in my study has been on my engagement in '*whole-being-learning*' and the engagement in '*whole-being-learning*' of those with whom I interacted in the local Anglican church and with teachers and students from the Durban University of Technology.

I have approached the use of narrative or story as a research strategy for each methodology. Overall, I have used story as a means of expression of the actual action in the research itself (Clandinin and Connelly 2000; Connelly and Clandinin 2006).

My study is influenced by Dewey's work in which education, experience and life are inextricably intertwined (Dewey 1916; Dewey 1934; Dewey 1938). I think about education as experience and support the view that

We learn about education from thinking about life, and we learn about life from thinking about education (Clandinin and Connelly 2000:xxiv).

My inquiry is about me living, telling and reliving my own story as a researcher interested in providing an account for my understanding of learning as a biochemical process. From the beginning I was able to deal with questions of "who I am in the field and who we are in the texts that we write on our experience of the field experience" (Clandinin and Connelly 2000:70). My primary research tool on my research journey over the past decade has been critical thinking and critical reflection. I started used writing only recently as a method of discovery of myself, my practice and others in my practice (Richardson 2000).

My critical autobiography moves into an autoethnography as it becomes entangled with the stories of the lives of other people with whom I interacted in my family, my work place, in the church and in my whole life (Ellis and Bochner 2000; Taylor, PC and Settлмаier 2003; Ellis 2004). I use action research living theory methodology to provide a story of my living theory, my explanation of my educational influence in my learning and in the learning of others. I use multimedia narratives such as video and photographs to present stories of my life-affirming energy with values as part of my action research self-study living theory (Whitehead 2009a; Whitehead 2009c; Whitehead 2010a).

I situate myself in my study as an *insider*, an *implicated insider* and *observer* (Jousse 2000; Stoller 1997) as I “understand, facilitate and articulate the teaching-learning process” from the perspectives of and through the lenses of my personal, spiritual and educational lived experiences (LaBoskey 2004:856). All the methodologies result in my personal, spiritual and educational life being exposed and open to critique. I found that I needed to have great courage as I expose my own vulnerability in my study.

As a self-study researcher, I focused on my “situated self” (Pithouse *et al.* 2009:45) using an “holistic approach that acknowledges the intersection of the personal and professional ... lead[ing] to reflective critique and a concern about change, social justice and professional action” (Pithouse *et al.* 2009:58). However I do not focus only on the “intersection of the personal and professional” but rather I observe that in my study I have *integrated my personal, spiritual and professional life as a learner and educator* (my italics) (Mitchell and Weber 1999).

Using auto-ethnography, my cultural “I” is shaped by my cultural contexts and complexities of my personal, spiritual and professional lived experience. “I” am privileged in action research living theory methodology as my focus is on the generation of my personal living theory, my spiritual living theory and my educational living theory.

In my research, all the methodologies are committed to me using different approaches to make a difference in the world by improvement of (my) practice (Whitehead 2009c). In my study I focus on the improvement of my understanding of my own learning as well as the learning of others in and through their practice. I found a common approach between an action research self-study living theory methodology and a self study methodology as they both involve a “systematic inquiry into [my] own practice” (Dinkelman 2003:9). My research is “self-initiated and self-focused and improvement aimed” (LaBoskey 2004:259). As I engage in this systematic inquiry, I “make explicit what is implicit in practice” (Pinnegar and Hamilton 2009). In my study I reflect on how I used action research cycles intuitively at first in my practice and only made it explicit in later years. My concern about myself in my research is to “provoke, challenge and illuminate rather than confirm and settle” (Bullough and Pinnegar 2001:20).

In writing my critical autobiography and autoethnography, I critically examine how my personal life-story and my cultural context (in)forms my present practice and plans for my future practice. I examine the concern of myself and others not living out our values as fully as they could be in our practice, as in action research self-study living theory methodology improvement of practice is values driven.

In my research regardless of methodology, I am committed to ethical behaviour in my interactions with colleagues and other participants. I obtained ethical clearance from my university for the overall study and from each research participant who was willing to participate in my study (see Appendix A : Template of consent form). I negotiated with participants as to the form of their input to my research. I asked them to write their stories by responding to open-ended questions on a questionnaire, at times and venues that were most suitable and comfortable for them. I allowed participants who did not want to write, the opportunity to share their story via an audio-recorded conversation. All my participants except for my colleagues students, agreed for their first names to be used in my study. I refer to the students by the coded numbers I gave to each of their response sheets.

What are the unique contributions of each methodology?

In my research, I have been guided overall by the following five elements of self study which according to LaBoskey (2004:259) are “self-initiated and focused”; “improvement aimed”; “interactive”; “includes multiple qualitative methods” and “intention of formalising work and making it available to the professional community for deliberation, testing and judgement”.

I have already described how many of these elements overlap with other methodologies. I see the unique contribution of self-study as the interactive element as I focus on the action of self in relation to other(s) as well as with documented literature revealing my professional identity and knowledge (Hamilton and Pinnegar 1998; Loughran and Northfield 1998; Guilfoyle *et al.* 2002; Hamilton and LaBoskey 2002; Dinkelman 2003; LaBoskey 2004; Hamilton *et al.* 2008; Pithouse *et al.* 2009; Pinnegar *et al.* 2010). I am reminded that I

...do not construct practice alone, and most often coming to know practice involves deepening [my] understanding of and relationship with others. ..provid[ing] understanding and assertion about how we might act differently in our future practice.(Pinnegar and Hamilton 2009:15)

In my study I thus engaged in dialogue with self, others and practice. In my narrative about my research, I have mingled my voice and my participants' voices through dialogues in the stories. I shared the stories I had written of my participants with them, asking them for their comments: "Please tell me what you think about what I have written about you, and me." I include their responses in my account.

In thinking about my lived experiences of my learning, I started by writing my autobiography (Taylor, PC and Settelmaier 2003; Afonso 2007). I write my autobiography from the perspective of and through the lens of my personal learning. In my thesis, I start with my autobiography in order to deal with the question of who I am as a learner by focussing on critical incidents in my own life-history. Some of the critical incidents I experienced were the love and support of a caring family, the loss of self-esteem as a socio-economically disadvantaged learner attending an under-resourced school, rejection I faced as a learner entering Higher Education and my spiritual growth through my experience of divine healing of Bell's Palsy. These critical incidents are nodal moments as they illuminate the struggles of my life, and will, I hope, allow readers to recognise and connect with my story.

In my autobiography, I reproduce the emotional impact of the incidents through a series of short evocative descriptions that reveal the "dramatic, thematic, and emotional significance" of educational experiences (Burroway 1987; Afonso 2007). Through engaging in the emotional impact of the incidents, I have come to understand myself and the process of learning in deeper ways (Ellis and Bochner 2000). As I wrote my stories and critically reflected on what I had written, I was able to uncover layers of meaning in my life, and in my connections with the lives of others. I became aware of the many layered narratives in my personal, spiritual and educational life that intersected. As I articulated these intersecting narrative threads, I found myself articulating my values, bringing them out of my gut- and heart-brain intuitions, knowing, and understanding, into my head-brain consciousness, knowing and understanding.

I experienced reflexive relationships in my study as I told my story of my childhood learning, filled with emotions of love, care, support and belief in myself, and was able to retell my childhood story as the story of JNGE (*pronounced Ginger*). JNGE is my story about me believing that I was/am 'Just Not Good Enough', and showing how I have grown and changed – which I think of as learning – and coming to believe in myself (showing the growth and change in my narrative from a story of rejection and not believing in myself). I have enriched my autobiography with photographs taken during my school years and at graduation, school reports from primary school through to matric and letters of application and rejection to study at university (Mitchell and Weber 1999).

I have pointedly provided unique insights and interpretation of the socio-political and cultural forces such as the specific apartheid policy of “separate education” in South Africa and how that has shaped my practice (Bloch 2009). As I engage history in my journey of personal development and occasional disappointment, I reveal my prejudices about education that excludes and rejects people that are from different cultural and socio-economic backgrounds to my own. In my autobiography I also highlight my biases towards engaging in educational experiences that are active, highly emotional, driven by intuition.

In my autoethnography, as I study myself, I include cultural elements of my personal experience of learning such as being a coloured female in a racially divided system of education and in a patriarchal system of education and religion (Ellis and Bochner 2000; Ellis 2004). As I situate myself within a broader socio-cultural context I reveal multiple layers of experience and understanding of *whole-being-learning*.

In my study of my educational practice, I have used action research living theory methodology. Whitehead (2009a) offers a living theory methodology that is useful for creating my own living theory which explains my educational influence. In November, 2009, I had a privileged opportunity of interacting with Jack Whitehead face-to-face during his keynote address at HELTASA at the University of Johannesburg, and then a week later at workshops based on “*Using a living theory methodology in improving practice and generating educational knowledge in living theories*” at the Durban University of Technology.

This interaction helped me to realise that action research living theory methodology was a relevant methodology and method for my research. Jack helped me to understand, and accept, that because my practice is lived, and because my practice is values-driven and (in)formed, my practice is the manifestation of my living theory, and therefore the ex-pression of me as *my own living theory*. I then came to understand that as I engage in understanding my own living theory, I am able to learn more (change more) and thus my theory changes as I am living what I learn, and new knowledge emerges (Hamilton and Pinnegar 1998).

In using an action research living theory methodology, I am able to show how I am both congruent and contradictory in my personal, spiritual and educational beliefs and behaviours. In some instances, I and others are not experiencing a joy-filled love and love-filled joy in our spiritual lives which is a contradiction. In some ways, our spirituality and learning in educational institutions is not fully active when our biochemistry for educational learning is operating at less than optimal levels because it is focused on something other than the educational learning at hand.

I adopt a living approach to educational theory and use action reflection cycle to “present [my] claims to know how and why [I] am attempting to overcome” my concerns in the form:

I experience a [concern] when some of my [spiritual and educational] values are negated in my practice. I imagine a solution to my concern; I act in the direction of my solution; I evaluate the outcomes of my actions; I modify my problems, ideas and actions in light of my evaluations (Whitehead 2009c:112).

I give an account of my own learning as a practitioner-researcher as well as the learning of others by investigating my practice of *whole-being-learning* with a view to offer explanations for what I am doing so that I can hold myself publicly accountable (McNiff 2010). I have used multimedia narratives to identify and express my values in my spiritual and educational lives. I have critically reflected on how, when and to what extent I live these values in my practices of engaging in *whole-being-learning* (Whitehead 2008a; Whitehead and Huxtable 2008; Whitehead 2009b). I use multimedia to show the life-affirming energy with my values of being loving, kind, respectful, considerate, impartial and showing sincere treatment of others, as explanatory principles of my spiritual influence. My values of loving what I do, having a passion for what I do and having fun and pleasure in all I do are explanatory

principles of my educational influence, and ex-pression of my biochemistry of learning, movement, change, development and understanding.

I use the unique contribution of narrative inquiry to share the lived experiences of myself and others as a story (Connelly and Clandinin 2006; Clandinin *et al.* 2007). In my study I use narrative inquiry as a mode of reporting my research through storytelling and as such I have been guided by issues of time, social elements and elements of my individual context and the location of my actions.

With whom did I interact in my study? How did I interact with them?

In my autobiography and autoethnography, which is my account of my personal learning, I have shared photos of my life-history from pre-school years, through high school to university study, highlighting the socio-political environment that influenced my *whole-being-learning*. I have constructed my account using photographs in the exploration of school-in-memory work (Mitchell and Weber 1999).

Using action research living theory methodology I studied the spiritual and educational influences of myself and others engaged in *whole-being-learning*. I compiled a schedule of my participants (SOP) with whom I interacted during my research and have presented it as Appendix B: Schedule of Participants (SOP). In my study, I reference the audio/video interactions with the participants using the following format: (SOP number, name, date, exact time of utterance in minutes). I omit the time for the written responses as they were a maximum length of a short paragraph

I studied the spiritual influences of myself and others engaged in *whole-being-learning* from the perspective of spiritual learning and through a spiritual lens by interacting with a total of eighteen parishioners from the local Anglican Communion where I worshipped and ministered from 1988 until 2011. In my account of my spiritual learning, I share a video of how I teach during my sermons in the church, and a video showing how I engage in liturgical dance as an influence on my spirituality.

My interactions with others were in the practice of ministry, my own theological studies and Bible studies, liturgical dance, floral arranging, and during “Quiet Mornings” that I facilitated. I used open-ended questions to determine the spiritual

influences experienced during their participation with me to actively learn, move, change, develop and understand their spirituality. I did not stipulate the length of the responses to the questions. Some of the participants responded with bulleted terms whilst others wrote many paragraphs. Some responses were hand written and others were typed and emailed or even sent as message on social media using Facebook. See Appendix C: Written responses of the participants. The general format of the questions for the spiritual learning perspective and lens were:

1. To what extent and how did I influence your learning during ...
2. To what extent and how did you influence my learning during ...
3. Can you describe the emotions you experienced during these learning moments giving instances or examples as appropriate?

I distributed the questionnaire either after a church service or for those who no longer attended the church, I contacted them via email and some of them responded via a SKYPE conversation. I held two SKYPE conversations with participants who were out of town – one with Fr Terry and his wife Rita who were in New Zealand and the other with Faith, an ex-parishioner from one of my local parishes who had moved down to the South Coast. I communicated with them via email and Facebook to set up a suitable time for the conversation. I audio recorded the conversations on the computer, but unfortunately the recording software I used was freeware - Jing™ and I had a problem starting the recording so I missed out on the initial few minutes. The conversation during that time though involved general niceties so I did not miss any critical data.

In my account of my spiritual learning, I have used photographs of Dawn, Charys and me arranging flowers for an Easter service to show the ex-expression of our spirituality achieved by realising our connections and relationships with each other, and the connection between God and His creation. I have also used photographs as a record of the activities during Quiet Days, which the women in the parish and I found promoted our spiritual *whole-being-learning*.

When studying the lived experience of *whole-being-learning* from an educational perspective and through an educational lens, I interacted with seven colleagues from the Durban University of Technology and five groups of their students in their second, third or fourth years of study, who were engaging in using games for *whole-*

being-learning. In my account of my educational learning, I share videos showing how I facilitate workshops on promoting the use of active learning, present at symposia and a conference. I have also included a video of Sherlien, one of my colleagues, presenting the games that she used for active learning at a symposium. I also used photographs to show how the creative potential of Derrick's students had been realised as they were nurtured in the development of their games for *whole-being-learning*.

I held conversations, at pre-arranged times during June to September 2009 with the lecturers, in their offices. As I engaged with the lecturers in conversation, for some, their story telling was short approximately 20 minutes whilst for others they spoke for up to 45 minutes. I originally scheduled a one-hour session with them. I interacted with the students by requesting them to write their responses as there were too many of them to hold individual conversations. I asked both the lecturers and students one open-ended question to elicit their stories:

What would you like to tell me about your experience – your feelings, thoughts and emotions - of using games for learning teaching and assessment?

After reading and listening to the responses of my colleagues and students, I realised that there were parts of the story that they had omitted and were critical for my account of my understanding of learning as a biochemical process.

I then held focus group discussions to elicit feelings and descriptions about what they had mentioned earlier. From the sharing of the ideas in a group, I hoped that others would also recognise their own ideas which they had not probably mentioned before (Pinnegar and Hamilton 2009). I did not sit in on the focus group discussions as I also wanted them to engage freely without my influence. I asked the lecturers the following questions:

1. How did you **feel** - what were your personal experiences - when you designed the games for playing or when you developed the games assignment for your learners?
2. What made you **feel** that you had to “make learning fun for them”?
3. The students had a **voice** they never had before. What did you observe in the learners - what gave them the voice and how did they express it?
4. Why do some students not want to **engage** in game-playing with the others?

5. What **changes** did you notice in the learners after they had played the games or designed the games?
6. What **changes** did you notice in yourself after you had introduced games in the classroom?

The followup questions for the students were

1. How do you **feel** when you play games?
2. Why do you think games help you **remember** better?
3. Why do you think games help you **understand** better?
4. In previous input from you, you mentioned that “Games make learning easier and games make studying easier”. What is the difference between **learning and studying**?

I used the specific terms that are underlined and bold in the followup questions as they are key terms that provide evidence of learning as a biochemical process (Pert 1999; Jousse 2000; Jousse 2004; Jousse 2005; Jousse 2006; Pert 2006).

How did I mine the data for usable and relevant evidence?

I generated a great deal of data: 180 minutes of audio recorded conversations, 130 minutes of video recordings, over 300 books, thesis and journal articles, more than 30 pages of photographs, email and questionnaire responses. I was “spoiled for choice” in the words of my supervisor. I learnt from Jack Whitehead during one of his presentations at the Durban University of Technology that all data is not evidence (Whitehead 2004).

So I had to ‘mine’ the data for ‘evidence’ I listened to the audio recordings, I watched the videos, I read and reread the books, the articles and the emails, and talked again and again to my research participants, trying all the time to distinguish what was usable and relevant. I was still “spoiled for choice” with respect to the evidence I had mined from the data. The stories that I could have written would have filled volumes, however I was restricted by the word limit of my thesis so I had to be even more rigorous in the selection of the appropriate evidence.

I transferred the audio recordings of my conversations to my i-Pod digital playback device from the digital recorder. Instead of transcribing the videos and the audio-recorded conversations, I listened to each recording numerous times for the different emotions revealed in the way my research participants spoke, informed by the view of Conolly (2002) that

While the scribal record captures and records aspects of the linguistic elements of the performance, i.e. the actual words are recorded, it does not record the dynamic vitality of the performance as an indivisible whole made manifest in (1) the kinaesthetic features, i.e. movement and gesture; (2) the spatial features, i.e. line, form, shape; (3) the paralinguistic and non-verbal aural features, i.e. non-verbal sounds, pitch, inflection, timbre, emphasis, vocal modulation; (4) the temporal features, i.e. pace, pause; (5) the interactive features, i.e. the responses of the audience (Conolly 2002:162).

I am aware that the paralinguistic elements of speech are connected to the emotions through the work done in the research field of Speech Emotion Recognition (Caponetti *et al.* 2011). I took particular note of the non-verbal sounds, I interpreted, them and created Table 1 which I used as a guide:

Table 1: Interpretation of Non-Verbal sounds (Timm, 2012)

<i>Non-verbal sound</i>	<i>Interpretation</i>
Pitch	High/low
Pace	Quick or slow
Pause	Frequency and length
Inflection	Up/down or wriggle
Volume	Loud/quiet
Timbre of voice quality	Sad, happy, thinking
Emphasis	Words emphasised
Repetition	Word or phrase

I mined the audio recordings for evidence, focusing on those aspects of the recordings that provided the most relevant and appropriate evidence to construct the narratives for my account of understanding learning as a biochemical process.

I used Whitehead's method (Whitehead 2008b; Whitehead 2009a; Whitehead 2009c; Whitehead 2010a) of viewing the video in order to "see and experience" the relationally dynamic flows of energy and values. Using Quicktime to view the videoclip, I moved the cursor along at about seven times the normal speed, a few times, back and forth, as I focussed on the values being expressed. I found that I could see and appreciate the embodied expression of values of the person, between

persons and within a space, in the rhythm of moving the cursor backwards and forwards. When I felt the “moment of empathetic resonance” I stopped the cursor, and reflected on the validity of the video.

As I viewed the videos, I was able to recognise the expression of our life-affirming energy (Whitehead 2008b; Whitehead and Huxtable 2008; Whitehead 2009c) through our corporeal-manual and laryngo-buccal gestes (Jousse 2000; Jousse 2004; Jousse 2005). Jousse used the term cinematograph for what we call video and he shared how the recorded cinematograph could be used to “study at our leisure” the psycho-physiological movement or ex-pressions of the body” (Jousse 2000:32). I agree with Jousse when he states :

I am well aware that even the most adequate vocabulary would not enable us to grasp fully the refinement and the highly expressive power of this intuitive, logical, mimismological gesticulation. Such density of life could not possibly ‘be expressed’ statically on paper. A proper lesson in Cinemimage would demand the collaboration of a man of pure Corporeal manual Style or the help of a cinematographic record of his gesticulation. It is *because it runs on without interruption*, that the movie film constitutes in fact the only ‘continuous, moving book’ capable of receiving and rendering, *in its full duration*, the movement and indivisible continuity of the logical, living, Propositional Geste (Jousse 2000:71).

In this way, I was also able to identify our – my own and those of my research participants - values of loving what we do, supporting and encouraging others as we engage in *whole-being-learning*. In my account, I provide an explanation of the particular context of the video as well as an explanation of the embodied values. I have used You Tube (<http://www.youtube.com>) as a streaming server to enable the integration of my videos into explanations of educational influence and the communication of meanings of energy flowing values as these are expressed in practice. I also provide all the videos I refer to in this thesis in the Schedule of Participants - Appendix B and on the enclosed DVD.

I used two stages of mining the data for evidence of biochemical activity in the lived experiences of myself and my research participants.

What was the first stage of mining data for evidence?

I believe that the evidence of biochemical activity in learning is found in the emotional issues experienced by learners. I believe in the indivisibility of thinking and

feeling and hence indivisibility of intellectual and emotional engagement (Jousse 2000; Pert 2008). The emotions experienced either trigger the learning or are the obstacles to learning. The low energy emotions are indicative of low biochemical activity whilst the high energy emotions indicate heightened biochemical activity. I observed the physical gestures, listened to the spoken word and read the written word recorded from the lived experiences of myself and my research participants. I identified the emotions of low energy, hence no, or low, engagement in learning experienced by myself and others, such as loss of self-esteem – in the case of Ingrid, lack of belief in the self – in the case of Sherlien, boredom experienced by Ivan and Dorinda's students and inertia as experienced by Derrick and Anisa's students. I identified the evidence of changes in emotion, energy and hence biochemical changes experienced when learning happens to me personally, spiritually and professionally as an educator. As I mined the data for evidence, I also identified within the written texts, the use of the terms by myself and others, such as, 'movement', 'growth', 'development', 'change' and 'understanding' as being synonymous or associated with 'learning'.

What was the second stage of mining data for evidence?

I used the evidence from the first stage for the second stage of mining the data for evidence. I mined for evidence of *whole-being-learning*. *Whole-being-learning* happens when there are nurturing relationships, recognition of talents and gifts and integration of knowledge. The key words - with synonyms - I used are 'caring', 'nurturing' or 'hurting'; recognising talents and gifts, questioning, integrating and embodied as well as intellectual knowing.

How did I use frameworks in my research?

I used frameworks to structure and direct the reporting of my research process as well as in the mining of the data for appropriate evidence when I explored my learning and the learning of others from a spiritual perspective and from an educational perspective.

In my stories of spiritual learning and my educational learning perspectives and lenses, I used Action Research Self-Study framework to structure and direct the reporting of the research process (McNiff and Whitehead 2006; McNiff 2010). I have re-phrased and re-ordered the sequence of the questions in the Framework in order

to present a coherent and meaningful report. I found the framework a most useful tool to help me discriminate or discern what data to use as evidence. Various frameworks for have been presented by different authors such as Brown (1994) Bullough and Pinnegar (2001), McNiff and Whitehead (2006; 2010).

I follow Whitehead's advice that "generating knowledge relies on asking, researching and answering good questions" (Whitehead 2009c). I realised that my particular context of my research and my voice in my research could not be adequately included in the original McNiff and Whitehead Framework unless I rephrased the questions. I have presented the adaptations and modifications in Table 2 and Table 3 I have thus been able to explicitly make space for the lived experience of myself and my research participants in my research report.

Table 2: Adaptation of Action Research Framework: my Spiritual learning (Timm 2012)

McNiff & Whitehead(2006)	McNiff(2010)	Questions used for my spiritual learning
<p>1. What really matters to me? 2. What do I care passionately about?</p> <p>3. What kind of difference do I want to make in the world?</p> <p>4. What are my values and why?</p> <p>5. What is my concern?</p> <p>6. Why am I concerned?</p> <p>7. What kind of experiences can I describe to show the reasons for my concerns?</p> <p>8. What can I do about it?</p> <p>9. What will I do about it?</p> <p>10. How do I evaluate the educational influences of my actions?</p> <p>11. How do I modify my concerns, ideas and actions in the light of my evaluation?</p>	<p>1.What is my concern?</p> <p>2.Why am I concerned?</p> <p>3.How do I show the situation as it is and as it develops as I take action?</p> <p>4.What can I do?</p> <p>5.What will I do?</p> <p>6.How do I generate evidence from the data?</p> <p>7.How do I check that any conclusions I come to are reasonably fair and accurate?</p> <p>8.How do I explain the significance of my action research?</p> <p>9.How do I modify my ideas and practices in light of my evaluation?</p>	<p>1. What really matters to me? What do I care passionately about? What kind of difference do I want to make in the world?</p> <p>2. What are my values and why?</p> <p>3. What is my concern? Why am I concerned?</p> <p>4. What evidence do I have for my concern?</p> <p>5. What have I done about my concern?</p> <p>6. How did studying theology influence my <i>whole-being-learning</i> of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?</p> <p>7. How did participating in liturgical dance influence my <i>whole-being-learning</i> of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?</p> <p>8. How did participating in floral arranging influence my <i>whole-being-learning</i> of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?</p> <p>9. How did I use Bible Studies to influence the <i>whole-being-learning</i> of Christian Spirituality of others? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?</p> <p>10. How did I use Quiet Days to influence the <i>whole-being-learning</i> of Christian Spirituality of others? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?</p> <p>11. What do I see as future explorations following on my study?</p>

Table 3 : Adaptation of Action Research Framework: my educational learning

McNiff & Whitehead (2006)	McNiff(2010)	Questions used for my educational learning
<p>1. What really matters to me? 2. What do I care passionately about?</p> <p>3. What kind of difference do I want to make in the world?</p> <p>4. What are my values and why?</p> <p>5. What is my concern?</p> <p>6. Why am I concerned?</p> <p>7. What kind of experiences can I describe to show the reasons for my concerns?</p> <p>8. What can I do about it?</p> <p>9. What will I do about it?</p> <p>10. How do I evaluate the educational influences of my actions?</p> <p>11. How do I modify my concerns, ideas and actions in the light of my evaluation?</p>	<p>1. What is my concern?</p> <p>2. Why am I concerned?</p> <p>3. How do I show the situation as it is and as it develops as I take action?</p> <p>4. What can I do?</p> <p>5. What will I do?</p> <p>6 How do I generate evidence from the data?</p> <p>7. How do I check that any conclusions I come to are reasonably fair and accurate?</p> <p>8. How do I explain the significance of my action research?</p> <p>9. How do I modify my ideas and practices in light of my evaluation?</p>	<p>1. What is my concern? Why am I concerned?</p> <p>2. What really matters to me? What do I care passionately about? What are my values and beliefs? What kind of difference do I want to make in the world?</p> <p>3. What is the extent of me living out my values and creating a safe space for <i>whole-being-learning</i> ?</p> <p>4. What is the evidence for my concern that students do not believe in themselves and how their emotional issues get in the way of their <i>whole-being-learning</i> ?</p> <p>5. What evidence do I have of my students who do not believe in themselves? What did I do to influence their belief in themselves?</p> <p>6. What evidence do I have of students not actively engaging with the teachers and with the subject matter? What did the teachers do? What evidence do I have of my influence? What evidence do I have of the teachers influence?</p> <p>7. What do I see as future explorations following on my study?</p>

The Johari Window was developed as a model of awareness of group processes by Joseph Luft (a Psychologist) and Harry Ingram (a physician) (Luft 1969). I modified the Johari Window framework (Kormanski 1988; Shenton 2007) and used it to mine the data I had generated from my colleagues for evidence of them using *whole-being-learning* techniques in their classrooms. I modified the Johari Window framework to examine the self as perceived by the self, and the self as perceived by others.

Table 4 : Original Johari window Framework

<i>Public self</i> Features of which the individual is aware known to the wider world as well	<i>Blind self</i> Characteristics of person known to others but not to the individual
<i>Private self</i> Individuals self knowledge which is not revealed to others	<i>Unknown self</i> Includes aspects of the person that neither the individual nor anyone else knows

Table 5 :Modified Johari Framework for the interpretation of data (Timm, 2012)

	Observed by the lecturer	Not observed the lecturer
Observed by the Academic Developer		
Not observed by the Academic Developer		

I have modified the framework by changing the focus from the “known” to the “observed” and the “self” to the lecturer whilst the “World or others” is changed to “the Academic Developer” as presented in Table 4 and Table 5.

I identified three concerns, as part of the action research living theory methodology (Whitehead 2010a; Whitehead 2011), regarding the engagement of *whole-being-learning* by lecturers and students at the Durban University of Technology. The three concerns were that students did not believe in themselves and emotional issues they experienced got in the way of their learning, students were not actively engaging with their teachers and learning was not happening and teachers were in a state of despair in their classes and needed support and encouragement.

I compiled one Johari window for each concern per lecturer. I populated the table with evidence I obtained from mining the data generated in observing the lecturers in my workshops and in their classrooms, audio-recordings of purposeful conversations with them and reading and listening to feedback from others with whom they interacted. I identified the terms/phrases indicating the emotions experienced by the teachers or the students as well as movement, growth, development, change and understanding relevant to the concern. In the first vertical column, I recorded the exact words used either in the purposeful conversations together with the time in minutes or the words from the student questionnaires with the corresponding identification number for the questionnaire. I recorded my observations and reflections in the second column. The second column was only completed after the first column.

Appendix D includes an exemplar of a completed framework for one concern for a lecturer.

How do I justify the use of ‘anecdotal stories’ as research?

During my research journey, I was often asked “How can anecdotal stories be research?” I thought about this deeply.

I realised that to answer this question, I had to decide what I understand about ‘research’ and ‘anecdotal stories.’

What do I believe about research?

I believe, like Marcel Jousse that

The aim of research is to quest for and discover fresh insights and understanding. But how can we discover something fresh and new when it appears as if all has already been discovered? By the incessant, meticulous and detailed scrutiny of the Old (Jousse 2000:482).

I also believe, like Laplace, that research is about discovery, and that

Discoveries consist in the bringing together of ideas susceptible to being connected, which have hitherto been isolated (Jousse 2000:54).

I further understand that

Humankind is not a recent, newly created phenomenon. Neither has it restricted its thinking and searching to customary and inevitably limited formulations. The sum of its age-old, never-ending experience, fertile with living psychological discoveries, is not totally contained in the library of the so-called classical authors. An even broader study of human thought and of all its vital and dynamic means of expression will assuredly lead us to a richer understanding of life (Jousse 2004:16).

Then there is an age-old dictum that echoes through my being.

Every Zen master knows though that the answer is "in" the question. There is no such thing as an impossible problem or enigma. The only thing that makes a solution "impossible" is the route used to find it. If you're going off on circuitous paths that lead nowhere, then nowhere is where you'll end up

(enchantedmind.com/html/creativity/.../zen_pondering_puzzles.html)

I like the way Neil Postman and Charles Weingartner express this.

Once you have learned how to ask relevant and appropriate questions, you have learned how to learn and no one can keep you from learning whatever you want or need to know (Neil Postman and Charles Weingartner, *Teaching as a Subversive Activity*, fno.org/oct97/question.html).

When I put all of the above together in my mind, I find that I have a number of beliefs which inform my understanding of 'research'.

I believe that the answer lies in the question. I believe that all human beings know a great deal of what they need to know. I believe that this human knowing is ancient in that it is held in the human genome, and because it is their own knowing, that it is authentic. I believe that I can discover something new when I juxtapose those things which have not been previously juxtaposed.

What do I do in my research informed by this set of beliefs?

I ask questions of human beings about human beings. I ask human beings, myself included, about their lived experiences. I ask human beings, myself included, about the intellectual discoveries they have made of themselves and others, and for themselves from their lived experiences. I ask human beings, myself included, about the emotional discoveries that they have made of themselves and others, and for themselves from their lived experiences. I ask human beings, myself included, about the spiritual discoveries that they have made of themselves and others, and for themselves from their lived experiences. I juxtapose all these responses and then I look for congruencies which answer the research questions that I have asked myself.

What do I believe about ‘anecdotal stories’?

I believe that all human knowledge however recorded is an ‘anecdotal story’ of one kind or another.

What is a story?

The Concise Oxford Dictionary defines a ‘story’ in seven different ways

1. past course of person’s or institutions life (...)
2. account given of an incident or series of events (...)
3. piece of narrative, tale of any length told or printed in prose or verse of actual or fictitious events, legend, myth, anecdote, novel, romance, narrative or descriptive item of news (...)
4. main facts or plot of novel or epic or play (...)
5. facts or experiences that deserve narration (...)
6. (colloq. or childish). lie, fib; liar (...)
7. ~book (...) ~line (...) ~teller (...).

All in this definition lend themselves to research of one kind or another. The “past course of person’s or institutions life”, an “account given of an incident or series of

events”, the “facts or experiences that deserve narration” all deserve responsible investigation to provide insights about human behaviours and the human condition.

Erik Ericson, the psychiatrist, has described each patient as a “universe of one”, and an eminent physician has claimed that “85 per cent of the problems a doctor sees in his office are not in a book (Schon 1983:16).

A “piece of narrative, tale of any length told or printed in prose or verse of actual or fictitious events, legend, myth, anecdote, novel, romance, narrative or descriptive item of news”, the “main facts or plot of novel or epic or play”, and storybooks, storylines, and storytellers also throw light on human behaviours and the human condition from a different perspective, that recorded in human stories, and grist to the mill of research into orality-literacy, and literature, and providing another perspective and lens for our understanding of the human being and the human condition. Even where human lies and fibs, and liars are significant to the mill of responsible research.

I borrow from the motto of Glenwood High School, Durban, South Africa, where my two sons spent their high school years. The Roman playwright Terentius Varro, who lived in the last few decades preceding the birth of Christ, wrote "Homo sum humani nihil a me alienum puto"³ - "I am a *human* - I consider nothing pertaining to human kind a matter of indifference to me" (my italics).

What is an anecdote?

An anecdote is defined in the Concise Oxford Dictionary as a “narrative (or painting, etc.) of amusing or interesting incident; (...) L.f. Gk *anekdota* things unpublished (...).”

There are three elements in this definition which deserve some attention in relation to the research. A “narrative” is a story which is primarily “interesting” and may be “amusing”, and which is a “thing unpublished”.

³ <http://glenwoodhighschool.co.za/school-prospectus>

Having addressed the “interesting” and perhaps “amusing” “narratives” under “story”, I focus here on the “thing unpublished”. I refer again to Marcel Jousse

The sum of its age-old, never-ending experience, fertile with living psychological discoveries, is not totally contained in the library of the so-called classical authors. An even broader study of human thought and of all its vital and dynamic means of expression will assuredly lead us to a richer understanding of life (Jousse 2004:16). (my bold)

From Jousse I understand that responsible and inclusional research cannot restrict itself to knowledge that has already been published, nor can it restrict itself to knowledge that has been recorded only in writing. I also reflect that all research is “unpublished” until it is published.

I am satisfied that “anecdotal stories” are research.

What do I believe about my study?

I believe that the evidence which I have provided appropriately answers the research questions which I have asked. My stories/accounts provided evidence of my concerns as well as the educational influences of various activities that I and others undertook to address the concerns experienced within our classrooms and learning environments in general. In order to address the concerns, I engaged in action research living theory methodology. I offer an explanation for my educational influence, my living educational and living spiritual theory. I offer my belief in the value of joy-filled love and love-filled joy in educational and spiritual practice.

In summary, in my research I have juxtaposed human biology and human learning. I have juxtaposed the scientific enquiry of many, which is already published and accredited, with the authentic accounts of the lived experiences of myself and others, which are shared orally, and are not published. I believe that this multiple juxtapositioning has revealed important discoveries about our understanding of effective education. I believe that in so doing, I have answered the question “How can anecdotal stories be research?”

Conclusion

In this chapter, I have described how my research design as a self-study researcher has included *insider, implicated and outsider* perspectives as I account for researching the 'self' as a phenomenon, my practice and the practice of others. I have been inventive in my methodology and provided a Venn analysis of the different methodologies I have employed in my study highlighting the commonalities and unique contributions of each methodology.

I provide information on how I interacted with various research participants during my generation of my data. I have described how I have mined my data for usable and relevant evidence using a two-stage approach as I was "spoiled for choice" with all the data I had generated. I share my modifications that I made to the Johari Framework and the Action Research Framework to structure my account of my study.

Chapter 3

How does learning happen?: Deep within my whole biochemical being?

This *anthropos* must be studied not only in [her] skull,
not only in [her] skeleton,
not only in [her] musculature, but as a whole living being.

This is not about the soul or body.

According to the doctrine taught by Aristotle and Thomas Aquinas
and aided by the power of constant, living observation

I say: 'There is only a *single*, there is only *one* human compound'.

To speak of a body and a soul separately is to operate an unwarranted vivisection...

Marcel Jousse

Introduction

In this chapter I will provide an account of my understanding of the biochemical nature of learning by examining the scientific literature presented out of the lived experiences of a number of scientists engaged in human biology, physiology and human expression.

Is Chemistry everywhere?

I recall that when I taught Chemistry 1 students at ML Sultan Technikon from 1987 until 2000, I frequently used the statement – “Chemistry is everywhere”. I would say this to make the students more aware of chemistry and chemical reactions, all the chemical changes - in every experience of their everyday lives. When I started taking a keen interest in ‘active learning’, as the co-ordinator of the Effective Learning Centre in 2001, I asked myself: “So, if chemistry is everywhere, where is the

chemistry in learning?" I then soon realized that in the human body where all biological processes are interdependent, it is not about the chemistry but rather the biochemistry since in the human being biochemical reactions are taking place all the time. I reasoned that these biochemical reactions are about changes that are continuously occurring in my body. I experience a variety of biochemical changes during my respiration process, my digestion process, the circulation of my blood and other such processes in my everyday life. So I decided to try to find out what the biochemical changes are that occur when I am learning. This raised even more questions for me such as, "Is there any learning-change?" "Where is the learning-change occurring?" "What is the nature of the learning-change?" "How do I know that learning-change is happening?" "What evidence of learning-change is apparent?" "How can I measure the evidence of learning-change?"

What have I learnt about learning as change?

I am unhappy about the term active learning since I understand that it is a tautology to say that learning is active. Learning by its very nature is about change. Historically and currently, theories of learning understand learning as a process of change. Change as an understanding of learning is demonstrated as behavioural change as a result of experience (Maples & Webster 1980 in Merriam & Caffarella 1991:124; (Merriam and Caffarella 1998). Four orientations of learning - with some main theorists - are generally behaviourist (Skinner 1973), cognitivist (Piaget 1926; Maslow 1968; Bruner 1977; Gagne 1985), humanist, (Rogers and Freiberg 1993) and situational (Lave and Wenger 1991). The locus of learning respectively in each of these orientations is stimuli in external environment, internal cognitive structuring, affective and cognitive needs, and the relationship between people and their environment. Sensory stimulation theory supports the notion that for greater learning to take place, multi-senses need to be stimulated but it does not provide the answer as to what is happening in the body when this stimulation occurs (Laird 1985).

The gap identified in these theories is that none of them addresses the locus of learning as a biochemical process within the whole being - the whole mind and the body (Conolly and Timm 2005). Whole being learning has a variety of understandings (Laird 1985; Hill and George 1996; Hill 1999; Jousse 2000) but only Jousse identifies that learning is the result of “intussusception” (Jousse, 2000:576) and that knowledge is visceral. According to Holdstock (1987), the discipline of education does not take cognisance of the fact that everything starts with the nature of my being – my whole human biochemical being.

What have I learnt about head-brain learning?

As a starting point to discover what is happening biochemically when I, as a human being, learn, I thought it would be useful to explore the world of neuroscience. My understanding at that point was that my learning happens in the neurons and there are neurons in my brain. I read many books and journal articles on the neuroscience of learning, on how the brain works, on the biology of the mind, the biology of belief, learning and education (Fagnou and Tucheck 1995; Bownds 1999; Andreas 2000; Zull 2002; Blackmore 2004; Goswami 2004; Wilson 2004a; Wilson 2004b; Leaf 2005; Lipton 2005; Ansari and Coch 2006; Goswami 2006; Wolfe, Pat 2006; Zull 2006; Silva 2007; Goswami 2008; Barnacle 2009; Reis *et al.* 2009; Carew and Magsamen 2010). As I read, I came to realize that learning does not only happen in my head-brain but that there were other ‘brains’ in my body with neural activity. As I read, I realized the significance of neurons and the neuronal network throughout the body. I found understanding of these neuronal networks by reading amongst others, the work of Zull (2002), Leaf (2005) and Lipton (2005).

Caroline Leaf in her book *Switch on your brain* (2005) says the following about learning:

...most learning, around 90%, actually takes place on levels that go beyond conscious, to what I call metacognitive thinking levels that include the non-conscious, in ways we never dreamt of before (Leaf 2005:2) (...) learning does not just happen at school or university, but from birth to death, 24 hours a day (Leaf 2005:58).

I am interested to note that Leaf's thinking is different from the thinking of many educators that most learning takes place when we are consciously aware of what we are doing like reading or taking notes. Leaf maintains that learning involves something above conscious and non-conscious levels. Leaf believes that the neural network dominates all that I do. Leaf focuses only on the neural network in the brain, but I am aware that this neural network operates throughout the body including the heart and the stomach. At that point I realized that I had to discover as much as I could about the whole of my neuronal network. I started with the brain, my brain.

Your brain is a very busy organ. It is on duty all the time, receiving vast amounts of information from your eyes, ears, nose and other sense organs. It even receives information while you are asleep (Leaf 2005 :75).

My brain receives the information in the form of electrical impulses from the sense organs which includes the skin all over my body which is my sense organ of touch. I am reminded by Robinson and Aronica (2009) that in addition to the five senses of sight, sound, smell, taste and touch, we have four more:

...sense of temperature (thermoception) (...) different from our sense of touch. We don't need to be touching anything to feel hot or cold. (...) sense of pain (nociception) (...) registering pain that originates from the inside or the outside of our bodies (...) vestibular sense (equilibrioception), which includes our sense of balance and acceleration (...) kinesthetic sense (proprioception), which gives us our understanding of where our limbs and the rest of our body are in space and in relation to each other. (...) all of these senses contribute to our feelings of being in the world and to our ability to function in it (Robinson and Aronica 2009:32-33)

Thus I feel and receive the electrical impulses not only through the organs in my head but throughout my body. The neural network operates throughout my body through the chemical messengers called neurotransmitters. The neurons are also involved in the process of receiving information, storing it in my memory and making it available. (Reis *et al.* 2009). Each person is

born with approximately 200 trillion neurons. Half of those were used for growth in the womb, birth, adjustment to life outside of the womb and the basic milestones – language, sitting walking and so on. That leaves 100 trillion neurons for you to learn with (Leaf 2005 :84).

The neurons in my brain do not reproduce but they mature or develop structurally. My brain has its full complement of neuronal learning cells from birth. As I grow, the interconnectedness of the neurons and density of my brain increases. As I learn, the network of neurons grows and these networks make memories possible. How do they grow? The receptors in my sense organs change the information they receive into electrical impulses which fire to and fro across the network in my hippocampus and corpus callosum. These impulses stimulate branches – called dendrites - to grow from the nerve cell body of the neurons thus establishing the network. The more electrical impulses I receive, the greater the number of dendrites on my nerve cells. The lengths of the neurons as well as the number of dendrites on my neurons vary across the network. My neurons vary from millimeters in length to meters long. The dendrites branching off from the neurons also vary, from a few, to a few thousand, all making connections with dendrites of my other cells. Dendritic spines on the dendrite have electrical impulses and these spines interconnect to form the neural network.

The electrical impulses on the dendrites move across the synapses. These synapses are the points of contact between the axons and dendrites. The axons collect signals from the dendrites and send them away from the nerve cell body. The axons are covered with myelin. The myelin helps the signal to pass more quickly along the axons. (I will discuss the role of myelin later.) An electrochemical reaction occurs in the fluid of the synapses due to the electrical impulse. This electrochemical reaction releases the neurotransmitters which result in the growth of the dendrites. Hence the greater the number of electrical impulses received and processed, the greater the amount of brain chemicals produced, the greater the network and the greater the memories. These brain chemicals, neuropeptides – opiates and the opiate receptors - are produced in the limbic system of my brain.

My limbic system is comprised of the thalamus, hypothalamus, amygdala and pituitary and it is directly linked to my emotions, pleasure and pain, and sense perception. My emotions play an important role in building of good and bad memories. When I feel fear and anger, chemicals are secreted that affect my memory negatively. This causes “memory fatigue, confusion, lack of concentration and memory loss” (Leaf 2005: 92). Hence, I reasoned, learning would happen more easily when the positive emotions of fun and pleasure are experienced. Pert believes “when we are playing we are stretching our emotional expressive ranges, loosening up our biochemical flow of information, getting unstuck, and healing our feelings” (Pert 1999:277). When we play we let the emotions and neuropeptides flow.

What have I learnt about the chemistry of emotions?

I became very interested in finding out more about the relationship between brain chemicals and emotions. In this quest, I came across the work of Candace Pert and Eric Kandell. Eric Kandell, from Columbia University won the Nobel prize in 2001 for his brain research. He showed that learning can dramatically change the effectiveness of a synapse and that the number of neurotransmitters at some synapses varies after learning and increases with repetition. Candace Pert in *Molecules of Emotion* cites the work of Eric Kandell

Dr Eric Kandell and his associates at Columbia University College of Physicians and Surgeons have proved that biochemical change wrought at the receptor level is the molecular basis of memory. When a receptor is flooded with a ligand, it changes the cell membrane in such a way that the probability of an electrical impulse travelling across the membrane where the receptor resides is facilitated or inhibited, thereafter affecting the choice of neuronal circuitry that will be used. These recent discoveries are important for appreciating how memories are stored not only in the brain, but in a *psychosomatic network* extending into the body, particularly in the ubiquitous receptors between nerves and bundles of cell bodies called ganglia, which are distributed not just in and near the spinal cord, but all the way out along pathways to internal organs and the very surface of our skin. The decision about what becomes a thought rising to consciousness and what remains undigested thought pattern buried at a deeper level in the body is mediated by the receptors. I'd say that the fact that memory is encoded or stored at the receptor level means the memory processes are emotion –driven and unconscious (but, like other receptor –mediated processes, can sometimes be made conscious) (Pert 1999 :143).

Thus I have molecules of emotion not only in my brain, but “*in the psychosomatic network*”(ibid).

Pert discovered that peptide and protein molecules known as endorphins and opiate receptors are the biochemical substrates for emotions and she coined the term ‘molecules of emotion’ (Pert 1999; Pert 2006). The opiate receptor binds with specific ligands in mycells that are of the opiate group such as endorphins, morphine or heroin. The ligands are smaller molecules than the receptors and they are classified as neurotransmitters, steroids and neuropeptides. The neurotransmitters are generally made in the limbic system of mybrain, the steroids include the hormones and the neuropeptides which are made up of building blocks, the amino acids. The neuropeptides constitute about 95% of the ligands and they play a wide role in regulating practically all of mylife processes. These neuropeptides are distributed throughout mybody’s nerves as the molecules of emotion. Due to this distribution of neuropeptides throughout mybody, I am able to experience numerous ways for myconscious mind to access and change myunconscious mind and mybody.

The neuropeptides (endorphins) and receptors (protein molecules such as opiates) form ion channels to pump ions in and out of the cell in a rhythmic pulsating movement (Reis *et al.* 2009) or as Pert mentions “moving, dancing in a rhythmic, vibratory way” (Pert 1999:23) as they bind with a ligand resulting in the chemical transfer of information into the cell. This pulsating movement creates an impulse that meanders through the body generating an electric current throughout the bodymind which keeps me awake, alert and conscious. The electric current also influences the state of excitability or relaxation of the entire organism. The excitability varies from place to place in the organism and from individual to individual depending on which receptors are occupied by which peptides. As mycells change, on a global level, I experience changes in behavior, physical activity and mood (Reis *et al.* 2009). Thus the current flow between individuals can be very different and may need to be modulated especially in relationships between people (Pert 2008).

The movement and change happens internally at the individual level and externally. When I place my hand on my chest, I feel the rhythm of my heart beat. My body is filled with rhythm and oscillations. There is power of rhythm in nature and in the human body. This rhythm can also exist in the classroom. However, the 'technological advances have obscured our intuitive harmony with nature's rhythms' (Miller, B 2009:7) we have lost touch with the natural rhythms and hence have experienced a disconnection and lack of interaction with nature.

Goleman reminds us too that

...we are wired to connect. Neuroscience has discovered that our brain's very design makes it *sociable*, inexorably drawn into an intimate brain-to-brain linkup whenever we engage with another person. The neural bridge lets us affect the brain- and so the body – of everyone we interact with, just as they do us. Even our most routine encounters act as regulators in the brain, priming our emotions, some desirable, some not. The more strongly connected we are with someone emotionally, the greater the mutual force. Our most potent exchanges occur with those people with whom we spend the most time of day in and out, year after year – particularly those we care about the most. During these neural linkups, our brains engage in an emotional tango, a dance of feelings. Our social interactions operate as modulators, something like interpersonal thermostats that continually reset key aspects of our brain function as they orchestrate our emotions. The resulting feelings have far-reaching consequences that ripple throughout our body, sending out cascades of hormones that regulate biological systems from our heart to our immune cells. ... our relationships mould not just our experience but our biology. The brain-to-brain link allows our strongest relationships to shape us on matters as benign as whether we laugh at the same jokes or as profound as which genes are (or not) activated in T-cells, the immune system's foot soldiers in the constant battle against invading bacteria and viruses (Goleman 2007:4-5).

I have provided a description of the brain and the central nervous system functioning as an electrical communication system as well as a chemical-based system throughout my body. I am interested to know that this discovery made in the 1970's of the 'chemical brain' was possible due to the technology available to measure the second nervous system. I am awed to realize that my chemical brain is more ancient and far more basic than the electrical network based on neuron-axon-dendrite-neurotransmitter connections. The neuropeptides were made inside my cells long

before there were dendrites, axons or neurons or even brains. As the neuropeptides move through extracellular space, flowing in my blood and cerebrospinal fluid, I experience complex and fundamental changes in my cells throughout my body. According to Elmer Green, a Mayo clinic Physician, as cited by Pert,

Every change in the physiological state is accompanied by an appropriate change in the mental emotional state, conscious or unconscious, and conversely, every change in the mental emotional state, conscious or unconscious, is accompanied by an appropriate change in the physiological state (Pert 1999 :137).

The molecules of emotion are not only in the head brain they are throughout the body and clusters of them exist in certain 'nodal' points in the body. The stomach and the heart each have an aggregation of these molecules as dense as that in the head-brain. Since the nervous system is a network throughout the body not just in the head-brain, is the change that occurs in learning only in the head-brain? Does it start in the head-brain or end in the head-brain?

I believe Pert when she says "the body is the unconscious mind" (Pert 1999:141) supporting the view that there are infinite ways for the conscious mind to access and modify the unconscious mind and the body. Hence my emotional brain is no longer confined to my limbic system. I have high concentrations of almost every neuropeptide receptor in other areas of my body like my spinal cord and where information from any of my nine senses – sight, sound, smell, taste, touch, thermoception, nociception, equilibrioception, proprioception, (Robinson and Aronica 2009:32-33) enters the nervous system. my neuropeptides process information, prioritise it and bias it to cause neurophysiological change within me. My emotions and bodily sensations are intricately intertwined in a multidirectional network. I experience each one altering the other, sometimes at an unconscious level or at times, at a conscious level. Furthermore, Candace Pert reminds me to:

Think of the brain as a machine for not merely filtering and storing this sensory input, but for associating it with other events or stimuli occurring simultaneously at any synapse or receptor along the way- that is, learning (Pert 1999 : 142).

Pert continues to state that

Emotional states are produced by the various neuropeptide ligands. An experience of an emotion or a feeling is a mechanism for activating a particular neuronal circuit-*simultaneously throughout the brain and the body*- which generates a behavior involving the whole creature, with all the necessary physiological changes that behavior would require. This fits nicely with Paul Ekman's elegant formulation that each emotion is experienced throughout the organism and not just in the head or the body, and has a corresponding facial expression. It's part of the constellation of bodily changes that occurs with each shift of subjective feeling (Pert 1999 :145).

I experience a change in my receptors, both in sensitivity and in the structure of the cell membrane thus providing a biochemical potential for change and growth, learning. My neuropeptides direct my attention by their activities and I am not consciously involved in deciding what gets processed, remembered and learned. I experience these changes at the subconscious level but they can be brought into consciousness by amongst other means, intentional training. Thus quite often, I am not aware of what I have actually learnt until an opportunity arises that actually brings it up consciously.

Furthermore, Pert says:

...peptides serve to weave the body's organs and systems into a single web that reacts to both internal and external environmental changes with complex, subtly orchestrated responses. Peptides are the sheet containing the music notes, phrases, and rhythms that allow the orchestra – your body- to play as an integrated entity. And the music that results is the tone or feeling that you experience subjectively as your emotions (Pert 1999 : 148).

This weaving that Pert mentions reminds me of the psychosomatic network mentioned earlier which I would like to connect with the belief that

Neurons that fire together, wire together. ...neurons do not work alone, they form networks of connected information. All brains contain the same basic structures, but the networks in each brain are as unique as that person's fingerprints (Childre *et al.* 1999 :36).

Through these networks of connected information I experience a flow, a constant exchange and processing and storage of information, which is what happens as neuropeptides and their receptors bind across the systems within my body. I observe that a network does not necessarily have a hierarchical structure, rather entry can be gained at any nodal point allowing quick access to any other point

hence the locations are equal in theory to direct the flow of information within my body. I experience the flow as living circuits across my body.

What have I learnt about the chemistry of memory?

According to Dr George Bartzokis, a UCLA neurologist and myelin researcher

All skills, all language, all music, all movements, are made of living circuits, and all circuits grow (Coyle 2009:6).

I discovered a book by Daniel Coyle the talent code (2009) which provides an explanation of the transformation of the wiring of our head-brains through myelination, as we approach tasks in our lives. In writing this book, Coyle drew on the work of a wide array of neurologists, psychologists and scientists and his own experiences. Having read Coyle's book, I think that by focusing on the head-brain only, he has missed the point. my whole body is wired and there is myelin sheath on the nerve fibers that are distributed throughout my whole body. I experience an increase in myelination - the growth of the myelin sheath - as my neural impulse activity increases (Fields 2005). my neural impulse activity increases as my senses are activated in my body.

I believe that the role of myelin is thus critical in the learning process. The myelin is a phospholipids membrane, a dense fat that wraps around the nerve fiber that is attached to the neuron cell body. Myelin is a neural insulator wrapped over my nerve fibers resulting in an increased signal strength, speed and accuracy of my living neural circuit. Each time my circuit is set up, my myelin layer is optimized around my nerve fibers. Having passion and persistence for something, working harder at it, spending energy and time all contributes to the growth of the myelin in the circuit (Fields 2005; Fields 2008b). The more I work at something, like developing a skill and thus my neuron circuit, the less aware I am that I am actually using it and the skill becomes spontaneous or automatic and stored in my subconscious mind. This process is called automaticity and I experience it as my myelin, the fat layer increases or grows. I have observed that the general focus of research has been on the neurons and the synapse with not much attention paid to the myelin, until recent

studies showed that not only synapses increase in brains as they are stimulated, but also the myelin increases (Fields 2005; Fields 2008b; Fields 2008a). Fields provides a description of how the myelin grows through the role of the supporter cells oligodendrocytes and astrocytes. These cells result in the growth of the myelin layer on the nerve fibers as a response to the nerve firing. Thus the firing of the nerves is proportional to the growth of the myelin layer which is proportional to the speed of the signal through the fiber. The exact mechanism of this process of myelin growth and the subsequent increase in neuron functioning, impulse speed and hence skill is still to be defined. Diseases such as multiple sclerosis result in the loss of skill and associated loss of myelin whilst the neuron connections remains intact (Fields 2008a). Myelin plays a role in how learning manifests itself together with the synaptic change that is key to learning.

Myelin is a living tissue that responds to actions such as urgent repetition of nerve firing. Myelination happens only in one way over a sustained period of time. Thus it is hard to break old habits except through doing new things often enough. The myelin will not 'unwrap' except by age and disease. There is a net gain of myelin until about age fifty after which it slows down yet still continues to grow though at a smaller rate again dependant on the nerve firing. The growth of myelin process is similar to what happens when the body grows muscle by pushing itself to the outer edges of physical ability (Bartzokis 2008).

Another point to consider now is that talent is no longer to be understood in terms of genes and environmental influences but also in terms of practicing more deeply and learning more skill (Miller, EM 1994; Casey 2000; Klingberg 2000; Fields 2005; Ullen 2005; Pujol 2006; Walhovd and Fjell 2007).

I understand the psychosomatic portion of the network as comprising the *psyche* which is generally nonmaterial in nature, such as the mind, emotion and soul and the *soma* which is the material world of molecules, cells and organs. Most of the

emphasis on understanding of learning thus far has been on the mind with less on the emotion and even less on the soul as far as the psyche is concerned (Wolfe, Pat and Brandt 1998; Bownds 1999; Brandt 1999; Ralph 2000; Strother 2007; Bakhurst 2008). With regards to the soma, there has been emphasis on the head-brain as the organ of learning, with not much about the molecules and cells and other possible organs (Byrne 1986; Caine and Caine 1995; Caine and Caine 1998b; D'Arcangelo 1998; Bransford *et al.* 2000; Pascale *et al.* 2001; David 2003; Ben *et al.* 2004; Ashby and Maddox 2005; Leaf 2005).

I am reminded of the words of James Zull, a Professor of Biology, who says:

Ultimately, our understanding of learning must be consistent with the biological properties of the learning organ. In fact, no matter how widely accepted they may be, all current theories will automatically be reconsidered and revisited as our knowledge about the brain continues to grow (Armour and Ardell 1984 :8).

This quote led me to explore whether the head-brain is the learning organ and also where is the brain in the human body – is it just in the head or elsewhere in the body? According to Candace Pert, the *mobile brain* is an appropriate term to describe the psychosomatic network since the head-brain is integrated so well at the molecular level with the rest of the body (Pert 1999: 188).

What have I learnt about the chemistry of gut-brain learning?

More recently, Barnacle (2009) in her article *Gut Instinct: The body and learning* cites the work of Wilson, who draws on clinical data to show how

hierarchical models which situate the central nervous system and cognition above and in control of the so called lower functions of the enteric nervous system cannot account for what actually occurs in both bodily and psychological processes and events . . . the nervous system extends well beyond the skull, and as it so travels through the body it takes the psyche with it (Wilson 2004b: 47).

So it is clear that the gut is capable of complex emotional responses and it is seen to be operating independently from the head-brain. From this I understand that the gut

is autonomous, producing my gut insights should play a role in my knowing and learning.

At about this time of my inquiry, I was alerted to an insert in a local newspaper (Brown, H 2005) that referred to the work of Dr Michael D. Gershon who had written a book entitled “The Second Brain” (Gershon 1998). Dr Michael Gershon is a neurobiologist whose research has focussed on understanding the nervous system that runs the bowel. The extract in the newspaper that I could relate to was

Two brains are better than one. At least that is the rationale for the close relationship between the human body’s two brains, the one at the top of the spinal cord and the hidden but powerful brain in the gut known as the enteric nervous system, which directs all of the functions of the gastrointestinal, or GI, system. In fact, anyone whose stomach has ever felt a little unsettled before giving a speech or had a bout of intestinal urgency the night before an examination has experienced the actions of the dual nervous system (Brown, H 2005).

I have felt and continue to feel that ‘unsettled stomach’ many times when conducting a staff development workshop or before delivering a sermon in church even though I have prepared everything in advance. I still experience the bouts of “intestinal urgency” (ibid) before examinations. I recall having had just that experience as recently as last year before I sat for a three-hour examination session on South African Church History as part of my B Theology studies. Even though I had done very well in all the assignments and prepared for the examination by going over all the pre-examination exercises, I still made at least two visits to the toilet within the half hour before writing due to the “intestinal urgency” (ibid) I experienced.

I thus proceeded to search for the text referred to in the newspaper article to obtain the primary source of the article. Through internet searches and the inter-library loans system at DUT, I located an article published by David Gershon in *Hospital Practice* (Gershon 1999a) and I obtained a copy of *The Second Brain* (Gershon 1998).

David Gershon believes that

Descartes said “I think, therefore I am,” because his gut prompted him to say so. The brain in the bowel has got to work right or no one will have the luxury to think at all. No one thinks straight when his mind is focussed on the toilet (Gershon 1998:xv)

and that

Rediscovery is every bit as good as discovery, if what is rediscovered is important and was forgotten. It is better still when the rediscovered information has the capacity to improve the lives of those around us... What I [Gershon] have done, with a great deal of help from colleagues around the world, is to find it [existence of the second brain] again and return it to scientific consciousness (Gershon 1998:3).

Gershon cites the laboratory work of Bayliss and Starling who deduced that the enteric nervous system was a self-contained hub of neuronal activity that operated largely independent of the central nervous system input (Gershon 1998:3-5). My enteric nervous system which is the local nervous mechanism of my bowel has properties like those of the head-brain and the spinal cord. My bowel contains a complex network, or *plexus*, of nerve cells and fibers. This network is made up of the Auerbach's plexus and the Meissner's plexus found in between the muscles encircling my gut. I have more nerve cells in the enteric nervous system- a few million - than those that connect the head-brain to the bowel- a few thousand motor fibers. My neurotransmitters are the chemicals involved in the communication between nerve cells. I thus have a large number of neurotransmitters in the bowel and the bowel can get along without hearing from the head-brain. All the classes of my neurotransmitters in the head-brain are found in the enteric nervous system. When my enteric nervous system fails and the gut does not work so well, all my brain functions also seem to fail (Gershon 1998).

My neurotransmitters in the body as the communicating chemicals belong to the same group as the molecules of emotion discovered by Candace Pert (1999). Gershon (1998) emphasizes acetylcholine and norepinephrine as the first two neurotransmitters discovered in the peripheral nervous system. Acetylcholine is the neurotransmitter that excites the ganglia linking the first nerve cell to the second nerve cell of the parasympathetic nerves, the sympathetic nerves as well as at the

second nerve cell junction, the neuroeffector, where the signal is sent to the effector under the control of the nerve cell. Norepinephrine is the neurotransmitter at the sympathetic neuroeffector junction. Once my nerve cells are excited, they express receptor molecules that bind the neurotransmitters and eventually lead to a physiological change within me. These receptors are molecules expressed on the cell surfaces enabling my cells to respond to specific chemicals in their environments. Serotonin was later discovered to be the neurotransmitter that was manufactured and stored in the bowel. Approximately 1% of the serotonin in my body is manufactured in my head-brain. (Gershon 1998).

I can thus understand how the enteric nervous system has been recognised as a “complex, integrative brain in its own right” (Gershon 1998:31) and as such can be seen as the second brain in my body in that all the classes of chemicals that transmit instructions in my head-brain are also represented in my enteric nervous system. The relationship between my cerebral and enteric brain is very close and to quote Gershon, “it is easy to become confused which is doing the talking” (Gershon 1999b:41) thus the ‘two brains’ can be seen as a whole or as one.

I understand that these chemicals, the neuropeptides and receptors, the biochemicals of emotion, are the messengers that link all the major systems of my body into the bodymind. My emotions are cellular signals involved in the translation of information into physical reality and they are thus the nexus between matter and mind.

Furthermore, I understand according to Lipton(2005), that my conscious mind not only “reads” the flow of the cellular co-ordinating signals that comprise my body’s “mind” it can also generate emotions, which are manifested through the controlled release of regulatory signals by my nervous system (Lipton 2005: 101). I see how my limbic system can now sense and co-ordinate the flow of behaviour-regulating signals within my cellular community.

What have I learnt about the chemistry of the heart-brain learning?

I believe my molecules of emotion are also found in my heart. I understand the heart is generally considered only in terms of its physiological function of being a multichanneled muscular organ with electrical circuitry. My heart is thus the central rhythmic force of my being. My experience of good health is a delicate balance of the rhythm with dis-ease resulting from dys-rhythm. I believe that my rhythms are regulated by love, an emotion that I feel as a human being. I ask myself, "Why then is the emotional definition of the heart and its effect on the physical body not considered by western conventional medicine?" Am I losing sight of the whole person, largely because of the body/mind split of Descartes? I have observed new practices to heal the mind/body split that are integrative and holistic or complementary (Dossey 2009). I believe that the heart with all its intelligence should not just be confined to religion and philosophy. I see the work done in this regard by the HeartMath Institute which combines scientific research with emotional wisdom as being very useful to explain all aspects of my heart. The Institute has coined the term "heart intelligence" which is

...the intelligent flow of awareness and insight that we experience once the mind and emotions are brought into balance and coherence through a self-initiated process. This form of intelligence is experienced as direct, intuitive knowing that manifests in thoughts and emotions that are beneficial for ourselves and others (Childre *et al.* 1999:6).

In exploring the biochemical link to learning through the functioning of the heart, I set about trying to understand the 'intelligent flow' between my heart, my head-brain and the rest of my body.

The heart is linked to the aspects of our lives such as wisdom, love, compassion, courage and strength that associate us with being human. The common sayings such as 'speaking from the heart'- when I consider people saying things that are sincere, or when people do something 'with all their heart' meaning that they throw themselves into an activity. Other idioms used are 'thinking with the head and not the heart', or 'becoming disheartened'. All these expressions are also linked to my

gestures of pointing to my heart when I point to myself. In many religions, the heart is referred to as the 'seat of the soul' and it is the connecting place between spirit and humanness.

The Mesopotamians, the Egyptians, the Babylonians and the Greeks – all of these ancient cultures- maintained that the heart was the primary organ capable of influencing and directing our emotions, our morality and our decision-making ability (RSV 1975).

When I reflect on my own Christian faith and read the Bible I also see the importance placed on the heart in both the Old Testament and the New Testament. Two examples of many more are from the book of Proverbs in the Old Testament refers to "For as a man thinketh in his heart, so is he" – Proverbs 23:7, and in the New Testament in Luke 5:22 "What reason ye in your hearts?" (RSV 1975). From my interactions with peoples of other faiths, I discovered that it is not only in the Christian faith, but also in other traditions such as the Judaic, Yogic, and in Chinese medicine that the heart has an 'intelligence' that operates independently of the brain yet in communication with it. However all this is generally not considered to be linked to science and hence not to be very sophisticated scientific thinking.

I recall that in biology lessons taught at school, the heart was considered to be just another working part of the body, devoid of independent intelligence or emotion. The heart of an unborn foetus starts beating before the head-brain is formed. The head-brain starts developing from the brainstem, then the emotional centres- the amygdala and the hippocampus emerge. Thus, the head-brain grows out of the emotional region. An unborn child has a beating heart before even an emotional brain and a rational brain.

I know that my heartbeat is autorhythmic with the timing of the beat thought to be controlled through the autonomic nervous system (Childre *et al.* 1999). My heart does not need a hardwired connection to the head-brain to keep it beating. My heart has at least forty thousand nerve cells which are as many as found in the subcortical centers in the head-brain (Armour and Ardell 1984). There is communications sent to the head-brain from the heart that affect the amygdala, the thalamus and the cortex. Physiologists John and Beatrice Lacey of the Fels Research Institute found that the heart did not merely mechanically respond to a signal from the head-brain (Lacey and Lacey 1970). My heart's response appeared to depend on the nature of the task at hand and the type of mental processing it required. Furthermore, the messages from my heart may actually influence my behavior. My heartbeat significantly influences how I perceive and react to the world (Lacey and Lacey 1970). Researchers in the later years discovered that the electrical activity of the higher head-brain centers involved in cognitive and emotional processing is directly affected by neural impulses which are as a result of the transformation of the rhythmic beating patterns of the heart (Schandry *et al.* 1986; Frysinger and Harper 1990; McCraty *et al.* 1996). The neural impulses change patterns of activity in the nervous system either by reducing activities such as releasing hormones, or flow in blood vessels or increasing the heart rate, or immune responses. Thus I experience biochemical change in my body involving change in hormone levels and reactions of the neuropeptides. So yet again I see the neuropeptides, and with them their receptors, as the biochemical basis of emotion.

The heart thus communicates with the body neurologically (through the transmission of nerve impulses), biochemically (through hormones and neurotransmitters), biophysically (through pressure waves) and energetically (through magnetic field interactions) (Childre *et al.* 1999: 28).

All these communication routes from my heart to my head-brain influence my physiological, mental and emotional processes in my body. The human "emotional system" is thus not confined to the head-brain but is a network distributed in a network that extends throughout the entire body as postulated by Candace Pert (1999). The emotional state of my body can be measured by the heart rate variability (HRV) which is the measurement of beat-to-beat changes in the heart rate. Smooth and harmonious HRV rhythms are generated by feelings of appreciation, love, compassion and care. These types of rhythms are less stressful to the body's

systems and result in more efficient communications between the heart and other organs. my bodies function at optimum capacity that includes learning, when the head and heart are attuned to each other and working together. This inner coherence can be considered to be a benchmark of intelligence and essential to effective living and learning.

I find the linking of intelligence to the heart rather different to the view of intelligence which has been measured as the cognitive ability and intellect through Intelligent Quotient (IQ) tests. The IQ scores of people did not change when measured at kindergarten and then in adulthood regardless of education received which led people to argue then that intelligence is inherited, fixed and cannot be changed (Goleman 2006). However, understandings of intelligence has changed due to the work of Howard Gardner (Gardner 2006), Daniel Goleman (1998; 2006; 2007) and many others on discovering multiple intelligences, emotional intelligence, social intelligence and spiritual intelligence. The HeartMath Institute has worked at finding an answer to Goleman's question: "*How can we bring intelligence to our emotions – and civility to our streets and caring to our communal life?*" (Goleman 2006 : xxiv). The Institute believes that the answer is in heart intelligence which is the source of emotional intelligence.

From our research at the Institute of HeartMath, we've concluded that *intelligence* and *intuition* are heightened when we learn to listen more deeply to our own heart. It's through learning how to decipher the messages we receive from our heart that we gain the keen perception needed to effectively manage our emotions in the midst of life's situations and challenges. The more we learn to listen and follow our heart intelligence, the more educated, balanced, and coherent our emotions become. (Childre *et al.* 1999 : 13)

I find the link between emotions and heart intelligence very interesting and important. The molecules of emotion that Candace Pert (1999) discovered, are the messengers that carry the message from my heart to my head-brain and to my whole body. Goleman (2006) shares a discussion that he had with Gardner on why he (Gardner) emphasised thoughts about feelings more than on emotions themselves, he (Gardner) said :

When I first wrote about the personal intelligences, I was talking about emotion, especially in my notion of intrapersonal intelligence – one component is emotionally tuning in to yourself. It's the visceral-feeling signals you get that are essential for interpersonal intelligence. But as it has developed in practice, the theory of multiple intelligence has evolved to focus more on metacognition rather than on the full range of emotional abilities (Goleman 2006:41).

The visceral feelings are the feelings felt throughout my body. These feelings provide evidence of our humanity and the emotions that enrich us. The higher values of the human heart of faith, hope, devotion and love are missed from the cognitive view. These values are intricately linked to our emotions which enrich our lives and our learning. Albert Einstein reminds us that:

The most beautiful and profound emotion we can experience is the sensation of the mystical. It is the power of all true science (Lipton 2005:152).

One way of understanding the mysteries of the universe is to use Newtonian linear thinking as well as quantum physics. From a quantum physics approach, we understand the universe as one indivisible dynamic whole in which energy and matter are entangled such that they cannot be considered as independent elements (Lipton 2005). Newtonian linear thinking on the other hand, provides categories of space, time and solid matter (Zohar and Marshall 1994). These categories lead to separateness, distance and causality resulting in either/or ways of thinking. Quantum physics provides us with a means of both/and kind of thinking. An example of this is in the case of light being both wavelike and particle-like at the same time.

Earlier on, I stated that matter and energy are entangled which leads to the corollary that mind (energy) and body (matter) are similarly bound. The reality of a quantum universe reconnects what Descartes took apart. The mind (energy) arises from the physical body and the physical body can be influenced by the material mind. Thought “energy” can activate or inhibit the cell's functioning proteins via the mechanics of constructive and destructive interference (Lipton 2005:95). Laws of quantum physics control a molecule's life-generating movements (Lipton 2005).

What have I learnt about learning related to human beliefs?

I read in Lipton's *Biology of Belief* (2005) that the mind is generally subdivided into the conscious and the unconscious which are actually interdependent. Furthermore, the conscious mind is the creative one, the one that conjures up positive thoughts. In contrast, the subconscious mind is a repository of stimulus response tapes derived from instincts and learned experiences. The subconscious mind is strictly habitual: it will play the same behavioural responses to life's signals over and over again. When it comes to sheer neurological processing abilities, the subconscious mind is millions of times more powerful than the conscious mind (Lipton 2005:97). I began to see that reason or thinking does not govern the subconscious mind whose actions are reflexive in nature. Thus I have the capacity to consciously evaluate my responses to environmental stimuli and change old responses any time desire as long as I deal with the powerful subconscious mind.

According to Candace Pert,

Awareness is the property of the whole organism; and in the psychosomatic network we see the conscious and [subconscious] mind infusing every aspect of the physical body, the body **is** the subconscious mind (Pert 2008:18).

My responses to environmental stimuli are controlled by perceptions which can be true or false. These controlling perceptions can be referred to as beliefs. I believe what I choose to believe. When I choose to believe then I will something into being, making it a reality, making it true. As I choose to believe, I thus change my mind. I agree then that

Beliefs control biology.... when the mind changes, it absolutely affects your biology. (Lipton 2005:111)

Synaptic pathways are hardwired in our subconscious minds by observing the beliefs, behaviours and attitudes of others around us. Our life experiences are thus downloaded and hardwired as stimulus response behaviours into our subconscious minds. The behavior activating stimuli are signals detected from the external world and/or signals that arise through biochemical reactions from within the body such as emotions, pleasure and pain.

Siegel (2008) also states that as I am mindfully aware and pay attention to my experiences, scientifically recognized changes in my physiology, my mental functions and interpersonal relationships are created. I can be mindfully aware of my inner self as well as of the other person in a relationship as I focus my attention either on myself or on the internal world of the other in the present moment. In so doing I “feel felt” and connected in a relationship that is vibrant and alive, an immediate experience (Siegel 2008:62,77). Feeling felt leads to feeling understood and feeling at peace as we are able to recognize and understand the energetic emotional signals from others.

Mindfulness thus results in amongst other attributes, patience, self-compassion and wisdom (Siegel 2008: 67). When I am mindfully aware, I also become more aware of my own awareness. Thus I reflect on my inner life moment by moment with curiosity, openness, acceptance and love - (COAL) (Siegel 2008:70). I realize that when I am without COAL, then I am not living a life being kind to myself or to others. I am not attuned and not in a caring relationship, not promoting kindness, respect and love, I am not mindfully aware. This is because functions of mindful awareness such as empathy, balancing emotions, attuning to others, being in touch with intuition are all associated with the growth of neural fibers in the prefrontal cortex just behind the forehead. These fibers are distributed throughout the body and are the underlying mechanisms leading to resonate feelings of connectedness and love between persons in a relationship.

My beliefs act like filters and change how I see the world. And my biology adapts to those beliefs (Lipton 2005; Church 2008). It is not my genes that control my life, it is my beliefs. I need to learn how to harness my mind to promote growth. Teachers can remove hope by programming me to believe I am powerless.

Your beliefs become your thoughts

Your thoughts become your words

Your words become your actions

Your actions become your habits

Your habits become your values

Your values become your destiny

Mahatma Gandhi (Lipton 2005:114)

When considering the quantum world, I need to remember that my presence and expectations alter what I see since I cannot isolate myself from a situation in which I find myself. This is because the universe from a quantum perspective is an integration of interdependent energy fields that are entangled in a meshwork of interactions. The flow of information is holistic. Thus the cellular constituents, proteins and neuropeptides are woven into a complex web of crosstalk, feedback and communication loops throughout the body (Lipton 2005:73).

What have I learnt about the value of energy in learning?

Jousse provides us with the theory of visceral intussusception to describe the ability humans have to learn-

“Intussusception is the grasping of the external world (suscipere) and the internalising thereof (intus), i.e. the synchronising of all the gestes that flow from nature into man, so that he can then express them. I use the term, ‘gestes’, but I should say ‘actions’ because outside of us they are only actions which take place. But within the man who receives them and re-plays them, these actions will become ‘gestes’” (Jousse 2000:576).

I am only able to know what I have intussuscepted. I cannot know what someone else has intussuscepted, as each person intussuscepts differently. Furthermore, through intussusception, “our learning, understanding, memory, thinking and feeling –mind- are operations of the whole human being, rather than of the brain only” (Conolly 2001:119). Pert asserts confidently at a recorded lecture in 2000, *Your Body is Your Subconscious Mind*, that ‘we think with and feel with our whole indivisible bio-psychological complexus of geste, and that we are indivisibly

resonating to the universe – whether we like it or not (Pert 2000). This ‘indivisibility’ of the human being, the anthropos, is a position that Jousse adopted as well from his teacher, Professor Pierre Janet who said “We think with our entire body” (Jousse 2000:83).

I understand that my movement or ‘geste’ is

action executed as a bio-psychological or psycho-physiological whole in reaction to actions played into him/her by the universe. These gestes can be visible or invisible, macroscopic or microscopic, developed or only hinted at, conscious or unconscious, voluntary or involuntary. (Jousse 2000:60)

my geste, the living energy, is regarded as the ‘motricity mechanism’ be it visible or invisible, macroscopic or microscopic, developed or only hinted at, conscious or unconscious, voluntary or involuntary (Jousse 2000; Jousse 2004). This ‘motricity mechanism’ or ‘motor response’ is the first and foremost e-motion in man, e-merging from the depths of my beings. Jousse reminds me that “memory is only, and can only be, the replaying of macroscopic or microscopic gestes which have previously been embedded in all the diversified fibres of the human organism” (Jousse 2000:26) by the process of intussusception. Memory is thus driven by motor-e(x)motion responses into consciousness throughout “all the diversified fibres of the human organism” (Jousse 2000:26) which constitute the whole of man. Jousse thus concludes

Memory constitutes man as a whole, and the whole of man is embedded in his Memory(Jousse 2000:258)

Conolly (2001:126) elaborates on the geste as being the “emotive-thoughts” and “thoughtfilled-feelings” of indivisible human thought and emotion. Furthermore, the geste operates both microscopically and macroscopically as a complexus of rhythmo-mimisms “received, registered and replayed” in interaction with the universe of the anthropos or whole being (Conolly 2001:126). Conolly provides an explanation of what Jousse termed the microscopic and macroscopic gestes:

The inner and hidden gestes are referred to as **microscopic**, and the visible outer gestes are referred to as **macroscopic**. In other terms, the

microscopic gestes are the inner vibrations of rhythmic motor energy - our thoughts and emotions - and the **macroscopic** gestes are the visible and audible - and other - manifestations of human expression, such as movement, dance and mime, sound, speech and song, writing, sculpting, painting and so on.(emphasis in original) (Conolly 2001:194).

Hence all my neurotransmitters inclusive of the molecules of emotion as described by Pert (1999) are microscopic gestes. The inner microscopic activity is either psycho-physiological or bio-psychological, what I have identified as the biochemical processes identified by Candace Pert (1999) and Michael Gershon (1998). The inner activity is what is *im*-pressed as reality in a child who receives it into her viscera, into her being and into her memory and then registers it, and then re-plays it. The macroscopic geste is the “observable expression of the inner activity” (Jousse 2004:36).

Jousse (2000) reminds me that the energy within each of my tissues is stored in a potential state in the form of chemical compounds. This highlights for me the particle –wave duality that exists in our human bodies. In my living body, the chemical compounds in turn transform into mechanical energy, heat, electricity in the muscles and into nervous energy in the nervous system. This transformation is occurring everywhere in my body and is ongoing which is evident as movement.

Dynamogenesis – release of energy- is the process that occurs as humans respond to internal and external stimuli. Stimuli arise continuously from the internal components of the body such as the muscles, vessels, glands, viscera as well as from the exterior through the skin, eyes, ears, noses and taste buds. As my body experiences dynamogenesis, its vital and intellectual capacity is enhanced. I experience this enhancement as pleasure. Pleasure is the consciousness of dynamogenesis. This release of energy, dynamogenesis, involves thought which is the bringing –into-consciousness, and the memory which is the re-play of consciousness. Both my thought and memory pulse and respond to the Rhythm of my Body. my body is in collective and continuous rhythm in the way that my heart-beats, rhythm in the way I breathe, rhythm in the balancing of my hands, rhythm in the footsteps I take. All this rhythm is organic and dependant upon the part of my

body that is used to express the intussuscepted, intelligised and globally re-played Cosmos.(Jousse 2000:175). Thus what I feel, act and know becomes visibly expressed and known as I interact with others and the cosmos.

According to Jousse, “In the universe everything interacts. There is universal interaction (Jousse 2000:62).

Every word I speak and every gesture that I make resonates through the universe for all time. Jousse observed that all elements of the universe interact following the Law of Interaction in ever interacting phases. The ‘universal interaction’ is triphasic and Jousse has formulated it as the Law of Interaction – “*an Acting one*’ – ‘*acting on*’ – ‘*an Acted upon*”” (Jousse 2000:111). An ‘*Acting one*’ and an ‘*Acted upon*’ are clusters of energy that are dynamically propelling gestes – streams of subtle energy. The interactions are indefinite, occurring with a degree of multiplicity as the ‘*Acted upon*’ registers and replays the action on other ‘action-beings’. The ‘*Acted upon*’ is unconscious of the multiple, complexus interactions played by the ‘*Acting one*.’ An ‘*Acting One*’ and ‘*Acted upon*’ are seen and mimed as a geste which is ‘in essence’ the reality itself – the *Essential Action*. The human has not only the one essential geste which has been ‘expressed’ within her /him, but rather many, which are considered her/his potential. The ‘*Acting one*’ and the ‘*Acted upon*’ act on each other through multiple *Transitory Actions* which are continuous and diverse.

Each interaction energises the following geste, in(de)finitely, in self-energising patterns of movement. As a dynamic living, breathing being, I am never motionless as all my involuntary processes move – cardiovascular, digestive – my gestes continue to move so my thought-filled feelings and my feeling-filled thoughts cannot stop.

Through intussusception, an ‘Acted upon’

replays the phases of each of the interactions of the universe mimically through the gestes of his[sic] whole body (...) What is created physically and

unconsciously in the universe is psycho-physiologically and consciously re-created in and through [the Acted upon] (Jousse 2000: 91).

Furthermore, Jousse observed that humans interact with each other and the world around them in a process of interaction which he called the Law of Mimism as “a process of dynamic imitation so that “everything that is re-played through us, is within us” (Jousse 2000: 25).

These two processes of interaction and dynamic imitation in- and trans-form my human understanding of ourselves and the world in which I live, viscerally, in “intuition” which rises from within the viscera into ‘intelligent consciousness’. Jousse notes that what is played into - in+pressed into - the anthropos is automatically in the memory. Even when ‘re-played’ in ‘ex-pression’, it leaves its ‘im-pression’ in the molecules of the viscera. As the ‘mimorisation’ is repeated into the ‘memorisation’, it rises into consciousness constituting learning and understanding and our knowledge - ‘what I know’.

I am fascinated how Conolly (2001) shows that Jousse is able to link memory, learning, the heart and the whole being:

Learning in the ‘**memory-heart**’, viz. ‘memorising’ is central to Jousse’s thesis of learning and understanding. ‘Mimorisation is memorisation’ he says, meaning that anything that has been ‘mimismed’ - im-pressed by the universe - is automatically embedded in the viscera, and is therefore learned, and therefore known, and therefore potentially understood. But it must be remembered that ‘mimisming’ implies, simultaneously the fulfilment of all the principles of the Anthropology of Geste and Rhythm, viz.: a ‘mirroring of meaning’ and rhythming in a balanced and formulaic format AND repeated re-impression in order that it rise into consciousness.

The mnemonic oral-style (Jousse, 2010, Sienaert, 1990; Conolly, 2001) is not ‘rote learning’, even though it might appear so. The distinguishing differences between oral-style mnemonic memorisation and rote-learning memorisation is that the former is (in)formed by corporeal-manual performed texts, and the latter either memorised from scribal alphabetic texts or simply imitated with little or no context, application and/or exemplification. The oral-style mnemonic text is always performed in context

and with examples to which the learner can relate because they are part of the learners' reality, while the rote-learning text is "meaningless words repeated without understanding or reference, and therefore have no potential for application, analysis, synthesis or evaluation unless the meaning can be resuscitated in some way" (Jousse 2004:145).

Jousse, using Jesus as a teacher role model says

Jesus was in essence a teacher who wanted adults to be taught as children are taught, which is why he uttered the famous maxim that is hardly ever properly understood : *unless you become like a small child, and memorize your lessons, you cannot enter into my divine teachings* (Jousse 2004:110).

A small child is a dynamic, living being. As a small child I am able to learn as I "be myself ... draw from [myself] the maximum of [myself]" (Jousse 2004:114). In becoming like a small child, I believe that I need to become aware of what I am as I engage with life, through play. A child spontaneously plays all of her experiences. She learns as she pays attention to, sees and observes things as oriented by the teacher. Her curiosity is conserved as she observes things and becomes conscious of everything that she mimes⁴. Jousse observed children to understand more about play and he concluded that:

Play consists of taking in the interactions of the universe and in replaying them. *Play* is, in and of itself, thought, expression, language. Human expression is nothing more than *Play*... the human child [is] immediately i(n)mpressed by the gestes of moving things and will mime the gestes of these things, and it will do so in an *interactional* fashion (Jousse 2004:118).

Jousse reminds us that

⁴ Mimism is the process of miming and the Mimeme is a "unit of selected voluntarily and involuntarily, balanced rhythmic formulaic expression synchronous with the universe" Conolly, J. 2001. An Annotated and Glossed English Translation of Memory, Memorisation and Memorisers in Ancient Galilee by Marcel Jousse: A Study of the Origin, Nature, Analysis and Recording of Mnemonic Rhythmo-stylistic Texts. PhD, University of Natal. ..

[I] think with, and feel with, [my] whole indivisible psycho-physiological complexus of geste, which resonates indivisibly with the universe, whether [I] am aware of it or not" (Jousse 2004:154).

This awareness is expressed in our emotions, beliefs and expectations and influences how we respond to and experience our world. Pert's scientific findings also show that emotions are molecular in the body and the "body is hardwired for pleasure" (Pert 2000).

So then what is the role of the head brain in memory? Pierre Janet as cited by Jousse has the following to say:

In no way is it the organ of action. Action does not depend on the brain; it is not performed by it. There was a time when the brain was said to secrete thought as the liver secretes bile. That is childish. A brain separated from a living being is incapable of thought or of action. The brain is one of the elements of the extremely complex circuit that we call action; when the brain is separated from the muscle, there is no longer action. Action is dependent on both brain and muscle. In reality, man thinks with his whole body; he thinks with his hands, his feet, his ears, as well as with his brain. It is absolutely ridiculous to claim that his thought depends on a part of himself: it is tantamount to saying that our manual ability depends on our fingernails.

Psychological activity is an activity of the whole - it is not a localized activity. The brain is quite simply a conglomerate of switches ... It is not the brain that determines psychological activity; it only regulates it. (Jousse 2000:73)

I have come to realise that I as a human being think and feel indivisibly with my whole body and being through the "complexus of gestes" (Jousse 2000:60). My gestes can change from deep unconsciousness to full consciousness or from purely automatic reflex action to totally voluntary activity depending on the emphasis placed on them by the organs that emit them. Thus an ocular geste makes me see, whilst an auricular geste, makes me hear. There are innumerable gestes being played and re-played in me at any one time. This led Jousse to seek an answer to the question:

How does the composite human being, situated at the very core of the universe's perpetual motion, react to this activity and manage to hold it in his memory? (Jousse 2000:60)

Jousse found the answer after years of observation of the human expression - both oralate and literate - of the whole being of people from all over the planet, from many different linguistic groups, cultures, and spiritual and religious beliefs. He formulated the psycho-physiological laws of human expression and memorisation.

What have I learnt about human expression and communication?

Jousse (2005) observed that humans ex-press (press out) their human inner reality - microscopic gestes - in different forms of external ex-pression - macroscopic gestes. He observed that human expression began in a new born infant at the level of 'whole body' which he called "corporeal-manual" (Jousse 2000) expression that involves use of the whole body and hands. Using "corporeal-manual" (ibid) expression, the human being expresses all states of consciousness, the emotional, the intellectual and motor, primarily through the movement of the body and the hands. The human being never loses this capacity. But human expression occurring through the "corporeal-manual" (ibid) only is limiting. It can only be used in daylight and other artificial sources of light, and in face-to-face interactions, and they cannot ex-press themselves corporeally-manually with something in their arms.

Hence an evolutionary and developmental drive takes place which localizes their expression in the larynx and the lips called "laryngo-buccal" (ibid) expression, not to the exclusion of the "corporeal-manual" (ibid), but to enhance it. In both evolutionary and developmental terms this takes place quickly and naturally. Babies are born expressing themselves corporeally-manually in physical and vocal movement and by the age of six to eight months they have discovered their lips to shape what is coming from their larynxes, and by the time they are one year old, they are using single words and have connected statements by the age of three. When the child goes to school - if he or she is that fortunate – the child learns the code known as scribal alphabetic writing. In evolutionary terms, the same pattern of development is evident: corporeal-manual ex-pression is enhanced by laryngo-buccal ex-pression, and scribal alphabetic writing comes much later, actually only 6000 years ago, which is recent, given the age of the human species.

These three categories of human expression – corporeal-manual, laryngo-buccal and written style – show distinct differences. The whole body is active in the first two categories, viz. the corporeal-manual and laryngo-buccal expression, and there is an immediate and direct interface with the inner geste. The law of memory states that:

The greater the number of motor elements a psychophysiological state engages, the greater the ease with which it will be revisited and relived (Jousse 2005:62)

But the third category of mimographism which develops into scribal alphabetic writing requires mediation through an extra-biological tool of some kind.

So I understand that the written style is mediated with a tool. The living expressive geste from Corporeal-manual style man is called Mimodrama, the laryngo-buccal gestes are Oral style and the algebrised or reduced form of Oral Styles produces the written style which is Mimographic from drawing or alphabetic scribal writing (Jousse 2000). Thus learning that relies on the human expression using only scribal alphabetic writing is not as active, as learning that includes all of the corporeal-manual and the laryngo-buccal forms of human expression and scribal alphabetic mode. The longevity and success of the oral tradition using the mnemonic oral style from all over the globe furthermore indicates to us that human learning can be effective and efficient without scribal alphabetic writing. This is not to say that scribal alphabetic writing has not added significantly to human development, but written texts in and of themselves are inert and do not present the vitality and energy of the living human being unless they are “reintegrated into the living musculature” (Jousse 2000:272). Jousse used the term ‘algebrisation’ to describe the mediated form of expression such as scribal alphabetic writing. The algebrisation “removes and dislocates us from the gestually balanced, rhythmmed, concrete Mimodramas of those...who remain spontaneous” (Jousse 2000:76). Scribal alphabetic writing as a form of mediated expression is a reduced means of recording the socio-cultural archive.

I have come to realise that nothing is ever written in a book which is not first recorded in living memory, but also very often because it is written in a book, I don't always try to remember. I have also come to realise that when the recording is in the form of scribal alphabetic writing then the tonal and gestual features are lost and the expression is potentially inert and dead, missing the corporeal-manual/laryngo-buccal elements of expression.

Jousse stated that

Corporeal-manual Style man is able to embed the countless actions and interactions of the universe in *his entire* acting, sensing and knowing *being*. This he does both for himself and for others: for himself a summarised microscopic gesticulation which still allows him to grasp with full consciousness and to trace with clarity each of the phases of the Propositional Geste will suffice, while for others he lets his corporeal and manual Mimemes irradiate macroscopically with all the amplitude needed to make them easily recognizable and understood (Jousse 2000:73).

Corporeal-manual Style man, who is spontaneous, has mirrored/imitated the many balanced rhythmic formulas of the universe - that is, mimed - and has the potential to mirror them synchronously, voluntarily and involuntarily. That in me which is orate - my residual corporeal-manual/ laryngo-buccal oral-style self - enables me to balance the expression of rhythmic formulas by activating the bilateralising and balancing conformity of my body that exists within me - left to right, top to bottom and back to front. The balanced expressions also "play in alternating pulsations of tension and relaxation, facilitating successive and rhythmic energetic explosions" (Jousse 2000:238). My life is driven by biological rhythms that are infinitely supple.

Our bodies pulse successively and we are therefore rhythmized. Our bodies create the universal and perpetual flow of Rhythmism. *Panta rei*, said Heraclitus. We cannot stop: that is the great ironic tragedy. We are never motionless. Around us, over us, in us, everything flows. Our hearts continue their beating and our blood flows, our breathing functions, our gestures, which have been labelled 'images', continue to flow. Everything flows within us, in spite of us. We cannot stop our thoughts, not even for one second. We try to fix our attention. 'A thought passes by', and immediately another fills the space. All things flow and we flow with them (Jousse 2000:238).

Communities engage in rituals as a significant activity to focus on a common purpose, at a common time and in a common way. Rituals are intrinsically rhythmic hence they can be aligned with natural rhythms. Thus rituals in the classroom are

powerful for preserving and enhancing harmonious rhythms. Rhythmic patterns of activity and rest, depicted in oscillation, allow for full engagement. Human capacity for full engagement is driven by the rhythmic patterns of high performance and personal renewal. Each human life moves, oscillates, vibrates and pulsates through seasonal flows or regular cycles. As the humans interact, so too do their energies oscillate, vibrate and pulsate in a wave-like manner thus either enhancing the intensity of the interaction or diminishing the intensity depending on their wavelengths and frequency of the energy-waves.

How do I relate the science of learning to what happens in the classrooms?

Thus I understand that in a learning situation where the teacher and the learner are interacting in a classroom, each of them (as particles) stay somewhat separate and maintain some of their original identities, while their energies (wave aspects) merge that gives rise to a new system that enfolds them. The teacher and the learner relate internally, they get inside each other and evolve together, with a new identity, not reducible to the sum of their parts. The interaction in the learning environment is not linear, but rather holistic in nature with lots of crosstalk, feedback and communication loops not just in one linear direction, and signals of different kinds, all of which are energised in multiple ways. The expressions of the memorization and mimorisation are visible in the macroscopic gestes of the teacher and the learner. I believe that the learning environment thus needs to be a 'safe space' where all these interactions result in active learning through a biochemical change experienced within the whole being of the learner.

From this point on in my account, I will be using *whole-being-learning* when I am referring to an understanding of learning as a biochemical process. The biochemical process is the inner microscopic activity of the neuropeptides and their receptors, molecules of emotion, as identified by Candace Pert (1999). These molecules of emotion are found throughout the whole being and not just localized in the head-brain, inclusive of the gut-brain as identified by Michael Gershon (1998). The biochemical change is inclusive of the myelin growth that occurs across the neuronal

circuits (Fields 2005; Fields 2008a; Fields 2008b). The inner microscopic activity is what is *im*-pressed as reality in a learner who receives it through her/his nine senses (Robinson and Aronica 2009), into her/his viscera, into her memory and into her/his whole being, then registers it, and then re-plays it. The macroscopic geste is the “observable expression of the inner activity” (Jousse 2004:36) in the learners.

Conclusion

In this chapter I have provided an account of the biochemistry, neuroscience, my understanding of learning as a biochemical process. In the following chapters, I will provide evidence of how the macroscopic gestes explained in this chapter can be recognized in learning teaching and assessment environments.

Chapter 4

How does learning happen?: My personal learning story

The ignorant man is not the unlearned,
but he who does not know himself,
and the learned man is stupid when he relies on books,
on knowledge and on authority to give him understanding.
Understanding comes only through self-knowledge,
which is awareness of one's total psychological process.
Thus education,
in the true sense,
is the understanding of oneself,
for it is within each one of us
that the whole of existence is gathered.
Krishnamurti

Introduction

In this chapter I will answer the question How do I account for my understanding of learning as a biochemical process in relation to my own journey as a learner? I share my autobiography and autoethnography from the perspective of and through the lens of my personal learning. I focus on critical incidents in my own life-history such as the love and support of a caring family, the loss of self-esteem as a socio-economically disadvantaged learner attending an under-resourced school, rejection I faced as a learner entering Higher Education as an undergraduate, my learning whilst working in the Chemical Industry, growth as a lecturer in a Higher Education Institution and my post-graduate studies.

My story of my own learning has been presented here because I believe Parker Palmer when he says,

... the story of my journey is no more or less important than anyone else's. It is simply the best source of data I have on a subject where generalisations often fail but truth may be found in the details (Palmer 2000:19).

I have experienced various emotions during my journey as a learner from my childhood through to the present, both in formal and informal learning situations. According to Candace Pert,

these emotions exist in the body as informational chemicals, the neuropeptides and receptors, and they also exist in another realm, the one we experience as feeling, inspiration, love – beyond the physical. The emotions move back and forth, flowing freely between both places, and, in that sense, they connect the physical and nonphysical (Pert 1999: 307).

When Pert writes about the connection between “the physical and the nonphysical” (Pert, *ibid*), I am reminded of critical incidents that have had an incredible emotional impact on me and that highlight the feelings, inspiration and love that I experienced in whole being during my journey as a learner. These emotions range from the love and support of a caring family to the rejection I felt when a Higher Education Institution rejected my application to study there because, as a Coloured, I was of the ‘wrong race classification.’

What was my context of my schooling?

During my years of Secondary and Higher Education (1974-1982) the apartheid policy of ‘separate education’ according to the National Party government in South Africa meant that different ‘races’ (Whites, Coloureds, Indians and Blacks) had to attend identified / designated schools and universities reserved exclusively for their use, so as to separate ‘races’ from each other in every possible way.

I use narrative as a form of inquiry to focus inward on my individual journey but also ‘simultaneously point outwards and towards the political and social’ as I share part of my life-story (Mitchell *et al.* 2005:4). When I reflect on my personal life I allow my body and my emotions - the bio-psychology of my being - a place in my theorising through making my actions and intentions transparent whilst reflecting on what is deep within my soul (Derry 2005). This process of reflection has brought me to become aware of what I know, and where the seat of that knowing is in my bio-psychological being. My knowing has been influenced by my intuition, my emotions and my life experience which I share in this chapter (Derry 2005). I use the visual methodologies approach of Claudia Mitchell and Sandra Weber (Mitchell & Weber, 1999; Mitchell *et al.*, 2005) which include use of photography and video. I find Jack Whitehead’s (Whitehead 2009b; Whitehead 2009a; Whitehead 2011) use of multimedia in explaining, interpreting and analysing the evidence that is revealed by living theories methodology are appropriate to re-discover, re-call and re-live the emotions I felt and continue to feel during my journey as a learner (Mitchell and Weber 1999; Mitchell *et al.* 2005; Whitehead 2009c; Whitehead 2009a; Whitehead

2011). The re-discovery, re-call and reliving the memories of my learning are useful not so that I take refuge in the past or forget the present, but rather to “illuminate and transform the present” according to hooks (1989:17) as cited in Mitchell and Weber (Mitchell and Weber 1999). My narrative on my personal learning involves an exploration of school-in-memory work (Mitchell and Weber 1999) and as such the ‘firsts’ in my school life-history and seeking answers to questions like ‘do I remember’...?’ in the context of particular events happening during my schooling are significant. As I look “*into – not simply at* - photographs from family albums I am able to frame [my] sense of the past and shape the course of [my] future” (Mitchell and Weber 1999: 74). In looking ‘into’ photos,

They invite us to remember, speculate, fantasize... [they] contribute to some of our most lasting impressions of school and of our lives as school children, reminding us of what we once were, and what we are no longer...provid[ing] perspectives on who we have become...inviting us not only to look back on ourselves as former students, but also forward to ourselves in the [current teaching and learning spaces] (Mitchell and Weber 1999:75).

Looking through my photo album, I came across some photos that reminded me of my journey through formal education systems. I will share a few photos of my life-history highlighting the socio-political environment that influenced my own learning. In so doing, I have become critically aware of my own learning as a product of the bio-psychological processes which Pert identifies as the result of neuropeptide transmission (Pert 1999) and what Jousse calls “intussusception” (Jousse 2000).

My mother, Colleen, the eldest in a family of three girls and four boys gave birth to me, Delysia, in 1961 in a small rural town in the southern parts of KwaZulu Natal. I am classified Coloured according to my birth certificate which I have included as Figure 2.

B.M.D. 5 (A).

N^o 44583

UNIE VAN SUID-AFRIKA.

UNION OF SOUTH AFRICA.

VERKORTE GEBORTESERTIFIKAAT.
Uitgereik kragtens artikel 40 van Wet No. 17 van 1923.

ABRIDGED BIRTH CERTIFICATE.
Issued in terms of Section 40 of Act No. 17 of 1923.

Gesertifiseer 'n ware uittreksel uit die geboorte-register van:—

Certified a true extract from the birth register of:—

Van BOWLER
Surname
Voorname DELYSIA NORELLE
First Names
Geboortedatum 17th NOVEMBER
Date of Birth
Geslag FEMALE
Sex
Distrik van geboorte ALFRED
District of Birth
Ras COLOURED
Race
Inskrywingsnommer 80/61
Entry Number

Plek
Place

Datum
Date

G.P.-S.6796290—1959-60—10,000-10. S.



Registrateur, Assistent-registrateur, Distriksregistrateur.
Registrar, Assistant Registrar, District Registrar.

[Handwritten signature]

Figure 2: my birth certificate

I am the oldest grandchild in the family. My mother's youngest sister, Wendy, is three years older than I am, and her youngest brother, Neil, is two years older than I. Rowan, my brother and Lynne, my sister are nine years and fourteen years, respectively, younger than I am. For the first nine years of my life I grew up with my

grandparents and hence was considered the youngest of a family of eight siblings, and only later in life did I take on the role of oldest sister to two younger siblings.

Growing up in a small rural town in the early sixties meant that the opportunities for formal schooling were very limited. I actually cannot recall having attended preschool. I have no photographic memories and my mother confirmed that I did not attend preschool because there was no preschool education available. The school for Coloureds in Harding enrolled learners from Sub A⁵ through to Std 10 and both my parents taught classes from Std 5 through to Std 10 in that school. My grandmother, with whom I spent most of my early childhood, was a housewife and I recall she sewed most of our clothing.

Who influenced my learning in early childhood? How did I express who I was in those photos of my early years? What were the gestures that I had internalised over the years?

In these photos I examine the macroscopic geste – the exterior physical and vocal gestures - as a starting point to considering my microscopic geste (Jousse 2006). In examining the exterior physical and vocal gestures, I am looking at the expressive gestures of my body as a whole and of my hands as I ‘ex-press – *to press out* ‘- myself (Jousse 2006:156). What do I *press out*? I ex-press what has been grasped from the exterior world and brought into me – that which I have intussuscepted and hence according to Jousse, “we can ex-press only that which has *im*-pressed itself in us” (Jousse 2004:38). So to understand myself as a learner I need

to become aware of, and to bring-into-consciousness, received, intussuscepted Mimemes⁶ in the face of, and confronted with the immediate concrete experience of ‘the real’ (Jousse 2006:148).

⁵ The school system has changed the nomenclature. Sub A is now Grade 1 and Std 10 is Grade 12

⁶ A Mimeme is the unit of stored intussuscepted Real played into us, held in memory, re-gistered and ready for replay. Jousse, M. 2006. *Be Yourself! Colonisation, Self-Colonisation and Decolonisation*. Sienart, E. and Conolly, J. Cape Town: Mantis Publishing.



Figure 3 : Preschool going age in the 1960's- I am on the extreme left



Figure 4 :Preschool going age in the 1960's- with schoolgoing siblings - I am in the front

I have selected photos taken in the garden at my grandmother's home. In these photos (Figure 3 and figure 4) I am about three to five years old, at the preschooling age. I am shown as a rather serious little kid, standing straight up, hands behind my back, all neat and proper, standing in line from youngest to oldest. I am firmly positioned in my place as the youngest and the expression on my face is serious in the first photo. Why did I act in that particular way in the photos? What had I learnt about how to present myself and from whom had I learnt?

Aristotle said that man is the greatest mimic of all animals and it is by mimism that he acquires his earliest knowledge. Mimism is according to Jousse (2006), the instinctive tendency of human beings to replay gestually - to mime- all the actions played into him/her by the universe as s/he is continuously in interaction with the universe.

I believe I had become 'in harmony with [my] milieu' and experienced awareness from the 'inside' of how I should behave when taking photographs. I believe I had learnt to conform to certain norms in my society since most photographs taken then were 'serious,' class photos or wedding photos. The norms of a child as 'being seen and not heard' and that I was not allowed to be 'playful' and 'out of line' when taking a photograph.

I can recall that from a young age, there was 'playtime' and there was 'school and homework time'. Playtime was when I had fun and could play with friends and this always seemed too short a time. School and homework time were serious times when no fun and laughter was permitted. Learning was a serious matter that had no place for laughter and games. Fear and anxiety were emotions that drove my achievement at school. Fear of not doing well at school and not being accepted made me work harder and harder.

So the photo shows how from a young age I was 'schooled' to being a serious person who regarded learning as a serious matter. The interaction I had with others who acted upon me influenced the way in which I dressed and gave a sense of belonging. We are all dressed in similar attire - shorts and shirts in the first photo so the sense of togetherness and uniformity is evident. My grandmother was a seamstress who sewed all the clothes we wore, even the school uniforms. So I am sure that it was easier for her to dress us all similarly.

In the second photo I am wearing a dress and the other two are in school uniform. I do not have a photo of my first day at school but looking at these photos I am reminded that I did not have a fear of starting school since I had older 'siblings' who were in the school already, and parents who were teachers. I was very excited and enthusiastic about going to school to the extent that I started school a year before the legal school-going age. I was excited to learn and be part of what my older siblings were doing. They were there for me at school and we spent time walking to and from school together and doing homework together, all as part of a serious endeavour.

The initial excitement soon changed to fear which drove my achievement from then on. I learnt the 'rules of being successful at school' meant consistent hard work which was rewarded, I believed by making the family proud of me. Indeed they were

proud since copies of all my school reports were neatly kept, and I still have them as reminders of my learning journey.

Extracts from my school reports for the early years stated *“This pupil has produced very good work throughout the year. Her hard work has been her reward to her as she has passed Sub A⁷”* (Figure 5 and figure 6 my Sub A school report)

⁷ The formal school year started with Sub A, then Sub B, and then Std 1 through to 10.

Subjects	Report		
	1	2	3
English:			
Oral Work.....	B		60%
Recitation.....	B		70%
Reading.....	A		100%
Written Work.....			
Language Work....			
Afrikaans:			
Oral Work.....			
Recitation.....			
Reading.....			
Written Work.....			
Arithmetic.....	A		100%
Environment Study....	B		A
Health Education.....	B		A
Writing.....	A		95%

Report 2:	Report		
	1	2	3
Arts and Crafts.....			
Scripture.....			
Neatness.....			
Days Absent			18

GENERAL REMARKS

Report 1: Delysia has produced very good work all round.

Report 2: This pupil has produced very good work throughout the year. Her hard work has been a reward to her as she has passed Sub A.

Class Teacher: *L. E. Dawsey*
 Principal: *M. R. E. LEWIS*
 Date: *23rd June, 1967*

Class Teacher: *L. E. Dawsey*
 Principal: *M. R. E. LEWIS*
 Date: *8th Dec, 1967*

Figure 5: Sub A report: inside

For the Parents

After scrutinising this report carefully, please sign and return it immediately.

EXPLANATION OF SYMBOLS

- A: Good
- B: Average
- C: Improvement required

SCHOOL RE-OPENS:

17th.....July, 1967.....
October, 19.....
24th.....January, 1968.....

SIGNATURE OF PARENT:

1st Report.....
 2nd Report.....
 3rd Report.....

B. Bowler (Mrs)

(For preparatory classes)

REPUBLIC OF SOUTH AFRICA
 DEPARTMENT OF COLOURED AFFAIRS

NAME OF THE SCHOOL
HARDING STATE HIGH SCHOOL
 NATAL

DATE

PRINCIPAL Report on Progress of

Delysia Bowler

for the period (1) 19th Jan, 1967 to
23rd June, 1967

(2).....19..... to

.....19.....

(3).....19..... to

.....19.....

CLASS Sub A

SECOND FOLD

FIRST FOLD

Figure 6: Sub A report: outside



Figure 7 Std 1 class

In figure 7, I am seated very seriously on the extreme left in the front. I was in std 1 and my report indicated that -“*Delysia is a diligent little girl. She has made very good progress in all her work. Examination results were very pleasing*” (Figure 8 and Figure 9: Report on progress of Delysia Bowler, 10 December 1969).

Subjects	Report		
	1	2	3
English:			
Oral Work.....	15	11 15	12 15 13
Recitation.....	10	7 10	7 10 8
Reading.....	25	24 25	25 25 25
Written Work.....	25	22 25	23 25 22
Language Work.....	25	14 25	24 25 25
Afrikaans:			
Oral Work.....	15	11 15	11 15 12
Recitation.....	10	7 10	8 10 8
Reading.....	30	24 30	28 30 30
Written Work.....	10	10 10	9 10 9
Language Work.....			
Arithmetic.....	A	20 14 20	18 20 20
Mechanical	B	30 2 30	28 30 29
Problems	C	30 28 30	27 30 29
Environment Study...	15	15 15	14 15 15
Health Education.....	10	10 10	10 10 10
History.....			
Geography.....	10	9 10	10 10 8
Nature Study.....	20	18 20	19 20 20
Handwriting.....			
Attainment.....	300	300	300
Pupil.....	224 1/2	273	283
Class.....	213	211	210

Report	Report		
	1	2	3
Arts and Crafts.....	C	B	B
Handwork.....	C	B	B
Scripture.....	B	B	A
Neatness.....	A	A	A
Application.....			
Days Absent.....	11	6	2

GENERAL REMARKS

Report 1:
Delysia has made good progress in all her work. She is very helpful about the classroom.

Report 2:
Delysia has worked well this term. She has made very good progress in all her work.

Report 3:
Delysia is a diligent little girl. She has made very good progress in all her work. Examination results were very pleasing.

Result: *Passed*

Class Teacher: *W. Lindenberg*
 Principal: *M. P. P. P.*
 Date: *10/12/1969*

Class Teacher: *W. Lindenberg*
 Principal: *M. P. P. P.*
 Date: *20/6/1969*

Class Teacher: *W. Lindenberg*
 Principal: *M. P. P. P.*
 Date: *26/9/1969*

Figure 8: Std 1 report: inside

For the Parents

After scrutinising this report carefully, please sign and return it immediately.

EXPLANATION OF SYMBOLS

- A: Very Good
- B: Good
- C: Average
- D: Weak
- E: Very Weak

SCHOOL RE-OPENS

15th July, 1969
 7th October, 1969
 21st January, 1970

SIGNATURE OF PARENT

1st Report W. Bawler
 2nd Report W. Bawler
 3rd Report _____

(For Standards 2, 3, 4 and 5)

REPUBLIC OF SOUTH AFRICA
 DEPARTMENT OF COLOURED AFFAIRS

NAME OF THE SCHOOL

Report on Progress of

Bawler Delysia

for the period (1) 22 1, 1969 to

20 6, 1969,

(2) 15 7, 1969 to

26 9, 1969.

(3) 7 10, 1969 to

10 12, 1969

STANDARD 1

SECOND FOLD

FIRST FOLD

Figure 9: Std 1 report: outside

This trend continued with my school reports showing very good achievement in Arithmetic with comments such as “a steady and conscientious pupil”- Std 4, “worked very well throughout the year.. first out of 41 in Std 5”.

I was hardworking, all through these school years. I had learnt and made progress in all my work. For me learning was not about playing. Learning was a serious business. School was not about fun. More so, there were subjects in the sciences which required even more serious engagement. I soon learnt that I had to do well in the ‘serious’ subjects to be successful. The fun subjects that did not really matter too much for my future were Languages, Arts and Crafts. I performed very well in Arithmetic, Environment Study and Health Education achieving full marks in the examinations whilst not achieving as well for the Languages, Arts and Crafts.

I felt good and confident that I was able to achieve well in school especially in mathematics and the sciences which were regarded by my peers as being difficult subjects. I enjoyed the acceptance that I felt from my peers and the sense of belonging when I was able to assist them in understanding the ‘serious subjects’.

What did this acceptance look like at High School? What type of relationships did I have with my peers in the High School classroom?

I was in Std 8 in 1976 when the photo below was taken (see Fig 10). I see that we are seated on the teacher’s desk in the front of the class. There are no books or papers on the table. There is no writing on the green chalkboard behind the table. There are no charts or posters on the walls behind us. There is a set-square on the ledge of the board and my friend is carrying a ruler. I recall that we stayed in the same classroom from the morning til the afternoon with the various subject teachers coming and going. This photo must have been taken between lessons or during a breaktime. We are relaxed in the photo pleased to be in each other’s company. I was happy and safe in the school.




Figure 10 std 8 class

The photo was taken in 1976 which was the year when the school children at Black South African schools protested against the inferior schooling offered by the apartheid government. The choice of subjects offered at the schools was limited and there were up to 40 learners in one classroom. Significant subjects – the serious science subjects – were only offered through the medium of Afrikaans which was a foreign language for the majority of Black learners and this made it totally impossible for them to pass. The schools for blacks and coloureds in the rural areas were generally not well resourced especially in the sciences.

The school I was attending in Harding during the 1976 protests was not directly affected by the protest action of the students. The students at my school did not participate in the protest action even though the school was not well resourced and did not offer Physical Science. We were not fearful or resentful of the education we received even though there were shortcomings in the system. I needed to study Physical Science if I was to continue to fulfil my parents dream of me becoming a medical doctor. My mother who was a home economics teacher, as well as the school guidance teacher had convinced me at this stage that since I was achieving so well at school, and I was such a serious student, I could become a medical doctor. To have a child become a medical doctor, was the pride of joy for every Coloured family. Not a teacher. Not a nurse. Not a lawyer. A DOCTOR!

The sadness though, was that Physical Science as a subject required for entry into Medical School, was not offered at this safe, rural school. So I would have to leave

home at age 15, with a Junior Certificate⁸, to attend a school out of the community many miles away. I do not have a copy of my Junior Certificate but have a copy of my September examination results which would have been the last examination before the final examination in November. See attached Figure 11 .



ADMINISTRATION OF COLOURED AFFAIRS
HARDING STATE HIGH SCHOOL
PROGRESS REPORT - STANDARDS 5 TO 10

Name of Pupil BOWLER DELYSIA Class 8(D)
 Term Ending: 24.09.1976 No. of days Absent: 3
 Position in Class _____ Total in Class 44

SUBJECT	Max. mark	Pupil's mark	Class Avera.
English H.....	4.00	1.97	1.47
Afrikaans L/S ;.....	3.00	1.81	1.26
General Science L/S.....			
Biology L/S.....	4.00	2.51	2.16
Mathematics L/S.....	4.00	2.25	1.48
History L/S.....	4.00	1.76	1.25
Geography L/S.....	4.00	2.16	1.48
Home Economics L/S.....			
Needlework L/S.....			
Accountancy L/S.....			
Business Economics /S.....			
General Handwork			
TOTAL			
	+ 23.00	12.46	
	Aggregate of... 18.00	69%	

PASSED/FAILED/CONDONED

Remarks: VERY GOOD
 English

Class Teacher: D. E. R. Lynn Principal: J. Heerden
 Next Term Begins: 05.10.1976 Very good work

Figure 11: Std 8 school report

⁸ A Junior Certificate, a national certificate, was issued on successful completion of Std 8.

I had to leave the environment where I was happy and felt safe amongst my peers. Things were changing. I was to begin a journey, on my own, in a new school, an urban school which offered Physical Science and new environment with new friends. My rhythm of life was being changed. I asked myself “How am I going to find a balance between all the new experiences – from rural to urban school, from no Physical Science to Higher Grade Physical Science, from an English monolingual environment to a bilingual – English and Afrikaans class, certainty of the familiar environment to uncertainty of a new environment with new friends? How will this change affect my achievement at school? What new relationships will I make among my peers? How am I going to cope in a much larger school with more students? Is it wise to move to another school for the last two years of my schooling?”

So I left the rural school with a Junior Certificate which was issued by a National Department of Coloured Affairs examination department.

The interesting thing to note on my Junior Certificate was my underachievement in Mathematics and History. I did not fare very well in Mathematics because I believe that the teacher did not prepare us adequately for the assessment. If only I had known what to learn, I would have learnt it and done well. There were questions in that examination paper on topics we had never been taught in class. The teacher shrugged off my queries about the paper saying that we should learn to work things out for ourselves if we wanted to succeed and not just be dependent on the teachers all the time. This was a hard but good lesson which I took to heart in my new school.

At the new school in Port Elizabeth, Afrikaans, one of the official languages that was just a subject at my previous school, was now offered together with English as a medium of instruction at the school. I was rather fearful of the changes in my life. I was taking a risk. New friends. New subjects. New teachers. New community. “Will I be successful in orienting myself?” In this new school which was bigger, only from Std 6 to Std 10, even though there were more pupils than in the school in Harding, the class sizes were smaller as is evident in fig 12.



Figure 12 Std 10 class.

In Std 10, I was in a class with many more males than females, still all coloured and thankfully using English as medium of instruction. I came to the school with a specific plan to learn Physical Science and leave with good symbols that would enable me to enter Medical School. I was driven by the need to be successful as my family had made a huge financial sacrifice for my education. My mother always said “I will pay for your education as long as you achieve and when you achieve remember, no-one can take it away from you - it is your education”.

I did do well at school and was able to quickly grasp the knowledge required to pass Physical Science. I was still very serious minded about school and did not make many friends even though there were only about 20 in the class. I was always in the top three of the class and received many book prizes at annual prize-givings. I was excited by this recognition of achievement which I had not experienced before.

So the change was good for me. I knew that I had to achieve. So I did achieve. I made a success. I learnt. The competition at school was strong with no time for playing games. It was im-pressed upon me all the time. Yet again school was a serious business: no time to play. I persevered at school. I missed my family but soon gained a new family in the people with whom I stayed.

Whilst in my matric year of study I started having great doubts about becoming a doctor. The thought of working with blood and in a medical of environment made me

feel rather queasy. I spoke with my mom and changed my ideas. I chose to study towards becoming a pharmacist which was in the scientific field and allowed me to work with people. The course was offered at University of Durban –Westville for Indians and at University of Western Cape, Cape Town for Coloureds. I did not want to be so far away from home in Cape Town. I wanted to be closer to my family that I had missed during the two years away from home so far away in Port Elizabeth.

Back to my Matric. I excelled in Mathematics obtaining an “A” symbol on the Higher Grade through the National Department of Coloured Affairs. See copy of matric results in figure 13.

VR-E

ADMINISTRASIE VAN KLEURLINGSAKE
PRIVAAT SAK 9053, KAAPSTAD

ADMINISTRATION OF COLOURED AFFAIRS
PRIVATE BAG 9053, CAPE TOWN

UITSLAGADVIES — ADVICE OF RESULTS

SENIOR SERTIFIKAATEKSAMEN 1978 SENIOR CERTIFICATE EXAMINATION

DELYSIA NORELLE BOWLER
P O BOX 110
HARDING
4680

Geboortedatum
Date of Birth 17/11/61

Eksamen Nr.
Examination No. 156017

ADMINISTRASIE VAN KLEURLINGSAKE
 KAAPSTAD
 5 11 1978
 CAPE TOWN
 ADMINISTRATION OF COLOURED AFFAIRS

UITSLAG VAN U EKSAMEN RESULT OF YOUR EXAMINATION

SLAAG/PASS

Dui aan dat aansoek om vrystelling van die Matrikulasië-eksamen namens u gedoen sal word.
Indicates that application will be made on your behalf for exemption from the Matriculation Examination.

Dui aan dat u op voorwaardelike vrystelling van die Matrikulasië-eksamen geregtig is.
Indicates that you are entitled to conditional exemption from the Matriculation Examination.


Dui aan dat u nie vrystelling van die Matrikulasië-eksamen verkry het nie.
Indicates that you did not obtain exemption from the Matriculation Examination.

Dui aan dat u in aanmerking kom vir toelating tot die P.O.D.-Kursus
Indicates that you are entitled to enter for the P.O.D. Course

Groot totaal SIMBOLE Aggregate SYMBOLS	950 en meer and over	minder as 950 under
	950 + B	950

SIMBOLE BEHAAL PER VAK — SYMBOLS OBTAINED PER SUBJECT

ENGELS — 1STE TAAL H / ENGLISH — 1ST LANGUAGE H ..	D	A = 80 — 100% B = 70 — 79% C = 60 — 69% D = 50 — 59% E = 40 — 49% F = 33½ — 39% FF = 30 — 33% G = 20 — 29% H = 0 — 19% F Slaagpunt in 'n vak op die Standaardgraad. Pass mark in a subject on the Standard Grade. E Slaagpunt in 'n vak op die Hoër Graad. Pass mark in a subject on the Higher Grade. E Slaagpunt in Groot totaal. Pass mark in Aggregate.
AFRIKAANS — 2DE TAAL H	D	
WISKUNDE H / MATHEMATICS H	A	
NATUUR- EN SKEIKUNDE, H / PHYSICAL SCIENCE H	C	
BIOLOGIE H / BIOLOGY H	B	
AARDRYKSKUNDE H / GEOGRAPHY H	C	
L.W. Kom u in aanmerking vir die aanvullende eksamen? N.B. Are you entitled to enter for the supplementary examination?	NEE / NO	


 namens Kommissaris van Kleurlingsake
 for Commissioner of Coloured Affairs

Vorm/A3372

Figure 13: Matric results

Why and how did I excel? The teacher helped me to understand and enjoy the subject, but also I ‘cracked the code’, or ‘learnt the rules of the exam game’ at that time. I had learnt from my Std 8 maths teacher, back in my safe rural environment, that I had to “Get to know the rules of the games played in matric exams. Get into the examiner’s head somehow. Learn what the teachers want you to know and you will be successful.” I decided to work things out on my own and predict a possible exam paper, study the questions and answers and hope for the best. I managed through studying past exam papers, to notice a trend in the exam papers that were set for learners writing the Department of Coloured Affairs exams. The examiners used questions from other Departments of Education⁹ question papers of a year or two earlier. To my amazement my gut instinct as well as the ‘code that I cracked’ for the examinations about what was going to be in the paper was spot-on. It worked and I was successful.

My results for the other subjects were not that good because I wanted to prove to myself then that I could improve on my JC Mathematics mark. In terms of the Physical Science, even though I did not do it in Std 8, I was able to pass the subject in Matric and yes, with this education, I was able to attend University.

The risk of entering a new school so late in my schooling years had paid off. I had changed and grown into a new person with independence and ready to take on a new challenge.

What were the challenges I faced during my undergraduate years? What did I learn from these challenges?

I had applied to the University of Durban–Westville to study Pharmacy. Following my mother’s gut instinct, we also applied for me to study a BSc at the then University of Natal, Durban - as she knew I wanted to be closer home. My heart was set on Pharmacy, with Chemistry as a second option, but not to study in Cape Town.

I was not prepared for the responses I received from the universities and state organs. I was horrified and deeply hurt. The correspondence from the universities

⁹ There were the Department of Coloured Affairs, Department of Indian Affairs, Departments of Education for each of the four provinces- for white students and the Department of Education and Training for the Blacks.

illustrates the racist prejudices of that time. I felt angry and truly rejected. I have included some of the correspondence in figures 14-16.

I had to make a choice. If I wanted to study Pharmacy, I had to go to Cape Town. If I wanted to be near my family, I had to study a course which was not offered in Cape Town.

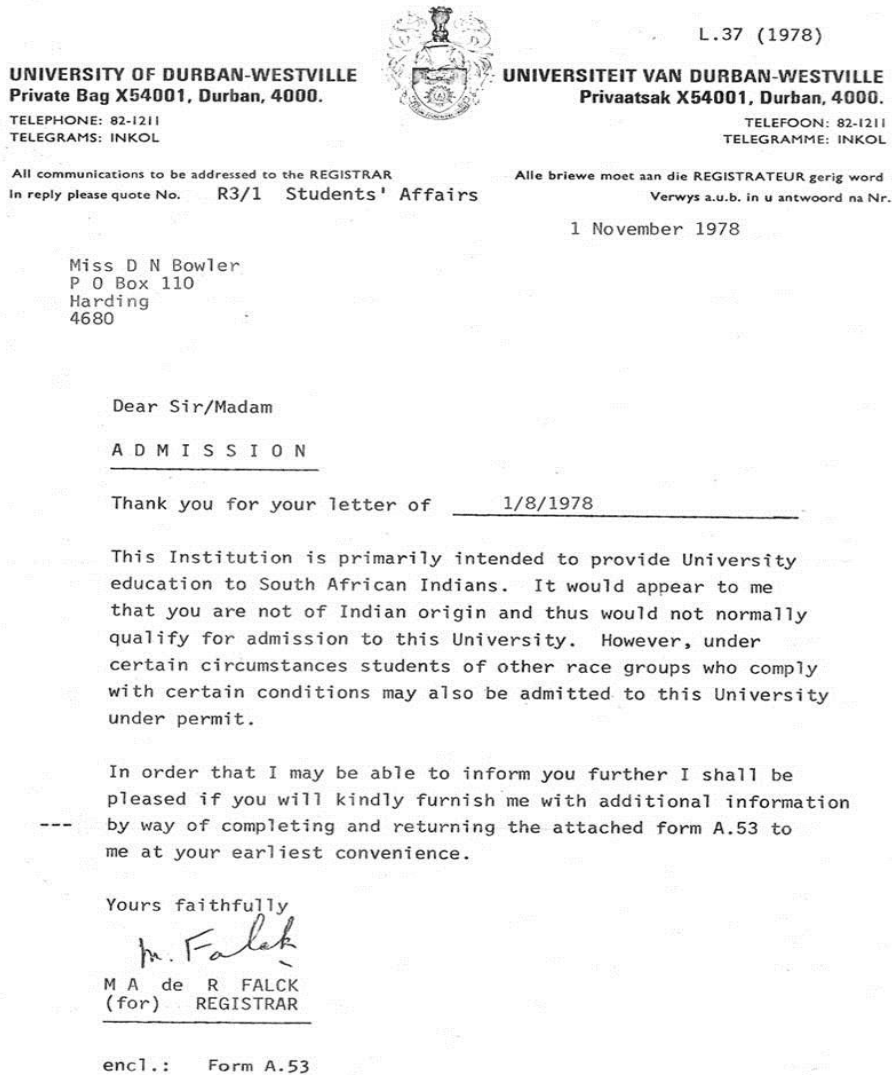


Figure 14: UDW response to initial application

Telegramadres:
Telegraphic address:
"COMASIA"

Navrae/Inquiries: Mr. H.J.P. Kotzê
Tel. No. 48-3749
Bylyn/Ext.....



REPUBLIEK VAN SUID-AFRIKA
REPUBLIC OF SOUTH AFRICA

Verwysing/Reference:

No. 19/39/5/3/1

DEPARTEMENT VAN INDIËRSAKE
DEPARTMENT OF INDIAN AFFAIRS

Oribigebou/Oribi House

hoek van Proes- en Andriesstraat
corner of Proes and Andries Streets

Privaatsak/Private Bag X92

Pretoria

0001

Mr. D.N. Bowler
Po. Box 110
Harding
4680

17-42-1978

Sir,

APPLICATION TO ATTEND THE UNIVERSITY OF DURBAN-WESTVILLE

Your application of 1 August 1978 refer.
Before the matter may be considered kindly inform me
urgently -

- (1) The full reasons why it is not possible for you to study at Western Cape.
- (11) Your fathers monthly or annual income.
- (111) The names and dates of birth of any brothers and sisters still at home.

Urgent Please

Yours Faithfully

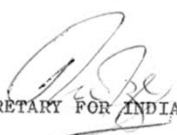

SECRETARY FOR INDIAN AFFAIRS

Figure 15: Department of Indian Affairs response



UNIVERSITY OF NATAL

KING GEORGE V AVENUE • DURBAN, NATAL

TELEPHONE: 352461

TELEGRAMS: 'UNIVERSITY'

ALL CORRESPONDENCE TO BE ADDRESSED TO THE REGISTRAR

9th February, 1979.

In reply please quote: 29/1/PW/pk

Miss D.N. Bowler,
P.O. Box 110,
HARDING.
4680

Dear Miss Bowler,

With regard to your acceptance for B. Science studies in 1979, I have to point out that in terms of Government regulations your registration at this University cannot be confirmed until you are in possession of the necessary clearance from the Department of ~~Education and Training/Coloured Affairs/Indian Affairs/National Education.~~

Should you not have received this clearance by the official registration date, i.e. Wednesday, 21st February, you may delay your registration until Friday, 9th March, which is the last date for late registration and no late registration penalty fee will be payable.

I would advise you, if you have not yet received the necessary permit, to contact the relevant Governmental authority and impress on him the urgency of the matter. Without receipt of this clearance by the 9th March, I am not permitted to confirm your acceptance.

Yours sincerely,

P. WARD (Mrs)
for REGISTRAR

Figure 16: University of Natal response

So I had to follow a course of study that was my second choice, not my heart's desire. I was going to be a Chemist, not a Pharmacist. I was going to work with chemicals not necessarily with people. But before that, I would have to obtain special permission to study in an Institution close to home. I had to get to know the unwritten rules of how to get permission. I included a subject that was not offered at UWC in my application. Nobody checked whether I actually did enrol and pass that subject - but I never did, and still successfully completed my undergraduate study in the minimum time at a university close to home, which really wanted me. I took a risk and it paid off.

I still feel angry about the fact that I had to obtain special permission to study at the university. The anger that I felt then, I still feel now when I need special permission to do things. I felt angry then and it was the anger that drove me to succeed in my studies. This emotion that I felt then and feel now as the "thoughts rise to the surface" (Pert 2008) confirms that much of the memory is emotion driven.

Throughout my years of University study, I had very supportive peers in my class (see fig 17 to 20) as well as a group of coloureds (see fig 21) who were senior students in the Faculty of Science and able to mentor me in a rather informal manner and help me work through the anger I felt. I realised that I was not alone. I felt that I belonged to the community. I experienced a compatible, rhythmic pulsating movement of the electric current between myself and those supportive friends (Pert 2008).

I am still in contact with some of my peers and we still encourage and support each other in our endeavours and the life-affirming flow of loving energy (Whitehead 2009a). I also had the support of my family who were with me at graduation (see fig 22). This was a proud family moment as I am a first-generation university learner in the family. My family supported me throughout my spiritual life, in my physical life, mentally and emotionally. My mother had a three year teaching diploma obtained at a Teacher Training College when she was 20 years old. Through this same family support, she completed her fourth year of her teacher training course while I was at University. (see fig 23)



Figure 17 Senior Chemistry students in study room



Figure 18 Delysia in study room



Figure 19 peers outside chemistry building

Working and
socialising – whites
and coloureds.
Entry into a
privileged world



Figure 20: working in lab



They all made it,
I can too...

Figure 21 Coloured mentors



My family-
always there

Figure 22 my family at graduation



My mother, a
Lifelong learner

Figure 23 Graduation- my mother 4th year teaching diploma

My lecturers at university were predominantly rather 'old,' White males in their late fifties as reflected in the graduation photo (fig 24). At that time, only 'they' became lecturers which was set aside for an elect few all of the same race classification. At

some of the Universities, this is still true even today. I never for one moment ever thought of myself as sitting there too one day as a lecturer. At that time, I thought I was going to be a Chemist working in Industry.

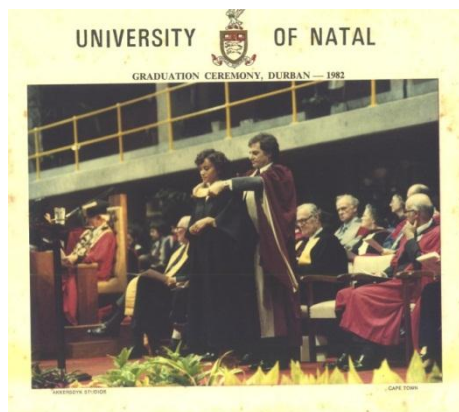


Figure 24 graduation stage

What did I learn whilst working in the Chemical Industry?

After completing my undergraduate studies, I worked as a Chemist for about two years in a multinational company and did not have much interaction with people. I realised that I needed to interact with people, to feel that relational dynamic energy (Whitehead 2009a). Chemicals and chemical equipment were too reactive for me, not interactive enough. I value engaging with people. But I also love technology and technical things. The laboratory environment that I worked in as a Chemist did not inspire or motivate me, I became bored.

I applied for a job as a technical trainer in the same company and really enjoyed training workers in the production environment. I felt the need to understand more about education to be effective as a trainer in the industry. I was also influenced by my mentors that I met whilst studying at university since two of them were science and mathematics teachers respectively. They had successfully completed a post-graduate qualification in education. Hence I enrolled for a correspondence post-graduate diploma in education whilst still a trainer in Industry.

Whilst enrolled for this diploma, I had an opportunity to apply for a position as a lecturer in chemistry at a Technikon¹⁰. I had become familiar with the education

¹⁰ The Technikons are now called University of Technology and they still have a career focussed programmes but also now offer degrees and post-graduate qualifications.

offered at the Technikon through assisting and supporting my colleagues in the laboratory to solve problems they experienced whilst they were registered students at the Technikon. They were registered for a Chemistry Diploma on a part-time basis. I felt very privileged to be able to assist them at that time even though I was not a formally trained teacher or lecturer. I also was very interested in learning about this very practical course they were studying. The course was very relevant for working in the laboratory. This also had a great influence on me applying for the position at the Technikon as a Chemistry lecturer. I was so excited as at this time. I was getting married and planned to start a family of my own. I felt that a position in education would allow me to be a mother as well as pursue a career that would not be too demanding. I would be a whole new person breaking new ground. I have included a copy of an article that was in one of the local newspapers.

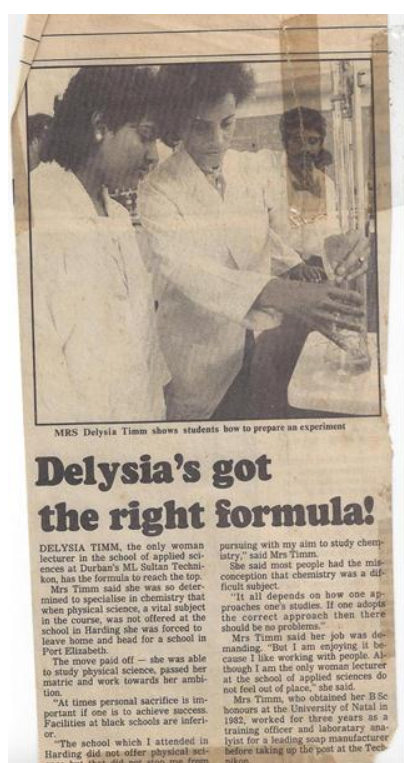


Figure 25: Only woman lecturer

What did I learn as a teacher within a Technikon?

I was the first Coloured female lecturer to work in the Institution reserved for Indians only, as well as the only female Chemistry lecturer at that time (see newspaper story in Figure 25). I experienced similar feelings to when I changed schools. I went from a very comfortable zone to something new and unfamiliar, to follow my heart. I took a

risk to work in an environment which was different to what I had been in before. I entered where I was 'not supposed to enter'. I was taking yet another risk in my life. I loved the challenge presented by the new job.

I discovered that my heart was in education.

I soon learnt that I needed help in understanding the learning processes happening in my classroom. This was very different to what I had experienced as a trainer. There was this varying learner background in terms of work experience in the relevant field and different levels of interest in the subject that I was faced with in my classroom. I did notice soon enough that I needed different strategies for dealing with each class of learners in the part-time class. I had learners who had a vast experience of working in the Chemical Industry. In the full time class, the learners were directly out of school with no experience of the Industry. In spite of the differences, they both had to be taught the same content because they had the same assessments at the end of the course.

I also taught Chemistry to learners at all levels of the National Diploma Analytical Chemistry. These learners were eager to know and understand more about Chemistry since it was their chosen career.

I also taught Chemistry to learners for whom Chemistry was only an introductory subject for their Diploma in a field of Health Sciences or in a field of Engineering.

I was the only female lecturer in the department and the only Coloured at a time when South Africa was still experiencing the hurt, pain and tensions of Apartheid. The learners in my classes were mainly of Indian origin and spoke English as their mother tongue at home. However over the years, this learner profile has changed to mainly Black South African for whom English is a second or third language or even a foreign language. Many of these learners came from schools that were under-resourced with respect to facilities as well as teachers. They were from families of very low socio-economic status yet rich in culture and tradition. They were first generation tertiary learners who found it very difficult to 'fit in' to the Technikon environment.

So faced with all these differing experiences in the classroom, how did I cope?

I experienced different flows of energy and values in the different classrooms. In some of them there was compatibility and a relationally dynamic and receptive response towards me and in others there was incompatibility of the rhythmic, pulsating electric current between us (Pert 2008; Whitehead 2009a). I felt that this was due to the students deeply emotional experiences they had whilst studying Chemistry at school level.

My own personal experiences of studying chemistry at school – how I had to change schools due to chemistry, how studying chemistry at university was not really my first choice as mentioned previously – all came back to me when I walked into the first Chemistry 1 class that I lectured. Many of them were from schools that were under resourced – no chemistry laboratories and had unqualified science teachers (Bloch 2009). I could identify with their feelings from my own learning of chemistry.

I realised that I did not know much about teaching and education though I knew Chemistry. I was still studying towards the Higher Diploma in Education, and while the course was interesting, it did not help me understand what was happening in my class since it was more applicable to the school environment and not to the Higher Education environment.

Most of my colleagues in my department that I taught with at that time knew their Chemistry, but had very little understanding of Education. They taught the way that they had been taught even though there were marked differences in the learner profile and course demands. I found that it did not work for me to teach the way that I had been taught, especially considering that the University I attended had an almost homogeneous, predominantly white, advantaged and privileged learner profile in the class. Another significant difference was that all the assessments at the University I attended were designed and conducted within each University autonomously.

At the Technikon where I taught, up until the mid-nineties. All the learners from all the different Technikons wrote a common examination. The final year examination was set by external lecturers from other Institutions. So in teaching, I was soon 'trained' to prepare the learners for the external examination. I had to 'complete the syllabus as per National instruction' so that my learners were not disadvantaged.

I felt very uncomfortable and uneasy. I felt that there could be a better way of teaching to ensure that the students were actually learning or engaging with the content. I was not happy to continue without getting some assistance to establish a better relationship with the learners in my classes. I could see that the learners were suffering, perplexed and fearful of failure. I too was also suffering, perplexed and fearful of failure in the classroom. I believed that there was a need for understanding and care, a need for human relationship between myself and the learners, a dialogue needed, similar to what Oliver Sacks refers to when he is treating patients not as “cases” but as people (Sacks 1990).

The Technikon at that time had a unit with one person in it responsible for staff development and curriculum development across the campus. I soon found out where the person was since I kept asking my Head of Department for assistance. He eventually sent me off rather sceptically, to that unit with the words “Go and see if they can be of any help to you”. The person responsible for Academic Development was Mr Graham Stewart¹¹.

In my conversation with Graham Stewart, I got excited since I quickly realised that I was not alone in my concerns about how I could improve what I was doing. He listened to what I had to say, understood my difficulties and together we worked out a plan. I felt encouraged.

The plan included an annual workshop for the Department of Chemistry during the end of year exam period to help us develop strategies and skills to deal with some of the problems we faced in the classroom. Soon these workshops were held twice a year and later on, they became more frequent as the Technikon employed more persons in the Academic Development unit. I learnt much from these workshops and on reflection, that is where the seeds for my involvement in academic development were planted.

My knowledge and practice of teaching really evolved over the years. I was largely influenced by my interaction with the staff development unit. I was willing and eager to try something new in my class - to do things differently for the sake of improvement.

¹¹ Mr Graham Stewart is now Professor Graham Stewart, a Deputy Dean of the Faculty of Arts and Design and continues to be a powerful developmental force to the good.

As time went by, the Technikons were given more control to design and conduct their own assessments and I was able to contribute to these developments in the Department of Chemistry. But it was not only in and for the department that I contributed. I eventually became the person that co-ordinated the development of the Chemistry curriculum across all the Technikons: Our institution was the convenor Technikon for Chemistry. This meant that we had the responsibility of facilitating the development of a shared Chemistry curriculum for all the Technikons. As I interacted with the Industry representatives and colleagues from other institutions who were part of the process of curriculum development, my passion for engaging in learning, teaching and assessment issues developed.

What have I learned from my post-graduate journey?

The qualifications offered at the Technikons soon changed from only National Diploma's and National Higher Diploma's to Masters Diploma's. This meant that my Honours qualification was not sufficient for me to teach at the Masters level. I needed to improve my qualifications to a Masters qualification. I was faced with a dilemma: "Do I complete a Masters in Chemistry or in Education?" By that time, having completed the postgraduate Higher Diploma and having taught for twelve years, my passion for Education was just as strong as my passion for Chemistry. The Technikon insisted that if I was to develop my teaching career within the Chemistry Department, then I had to register for a Masters in Science. At that time I wanted to stay in the Chemistry Department. However, I wanted to include Education in my studies since my primary role I saw as being an educator and not as a Chemist. I needed to find a university that would be able to include education as part of a Chemistry post graduate qualification.

At that time, this notion of a multi-disciplinary qualification was still frowned upon by most of the universities. How could I want to do combination of such different disciplines whose epistemologies were generally regarded then as being so different, especially in South Africa? I could register for a Masters in Education and consider the science of Chemistry, and teaching of Chemistry as a science. However this would then mean I could not supervise or be involved with a Masters Diploma in Chemistry in the future, I would need to move and teach in the Department of Education. I did not want to do that. I wanted to teach Chemists and not teachers.

Through my networks across the tertiary institutions, I eventually found a University that offered a Masters in Science with a specialisation in Chemistry Education. I really enjoyed all aspects of the programme that was course-work based with a mini-dissertation. I completed a Chemistry research project as well as a mini-dissertation that included the teaching of Chemistry. I was in my 'Element' to use Ken Robinson's concept (Robinson and Aronica 2009).

Being in their Element takes [people] beyond the ordinary experience of enjoyment or happiness...they connect with something fundamental to their sense of identity, purpose and well-being. Being there provides a sense of self-revelation, of defining who they really are and what they're really meant to be doing with their lives. The Element is different for everyone. The Element has two main features, and there are two conditions for being in it. The features are *aptitude* and *passion*. The conditions are *attitude* and *opportunity*...An *aptitude* is a natural facility for something. It is an intuitive feel or grasp of what that thing is, how it works, and how to use it. Finding and developing our creative strengths is an essential part of becoming who we really are...many people are good at something but don't feel that it's their life's calling. Being in your Element needs something more – *passion*. People who are in their Element take a deep delight and pleasure in what they do. *Attitude* is our personal perspective on ourselves and our circumstances – our angle on things, our disposition, and our emotional point of view. Many things affect our attitudes, including our basic character, our spirit, our sense of self-worth, the perceptions of those around us, and their expectations of us... without the right *opportunities*, you may never know what your aptitudes are or how far they might take you... a lot depends on the *opportunities* we have, on the *opportunities* we create, and how and if we take them. Being in your Element often means being connected with other people who share the same passions and have a common sense of commitment. In practice this means actively seeking opportunities to explore your aptitude in different fields. Often we need other people to help us recognise our real talents. Often we can help other people to discover theirs. (Robinson and Aronica 2009: 21 - 25)

The Masters course was offered by distance-learning which meant that I did not have any face-to-face sessions with my lecturers. The only time I had face-to-face sessions was when I met with my supervisor for my mini-dissertation. So I had to be a self-directed learner.

Well, who was the 'self that was me' at this time? Whilst juggling through the roles of, amongst others, wife, mother, daughter, educator and learner I did the course part-time.

Whilst registered for this course, I experienced major changes in my life. I changed jobs, and both my biological and step-dad died within nine months of each other. The change in jobs happened whilst doing my coursework aspect. I accepted a two-

year contract position, in the same institution, in the academic development unit. This position was as the Effective Learning Centre co-ordinator where I would have an opportunity here to engage with learning, teaching and assessment issues whilst helping academics to develop innovative learning materials. I was excited to take this contract position since my position in the Department of Chemistry would still be there after two years, if I wanted to return. So I saw this as an opportunity to test whether my passion for learning, teaching and assessment would grow or just fade away.

All of this was happening in the same time period that both my fathers died. The loss of both my dad's was a traumatic time for me since I was present at both of their deathbeds. The one died as a result of cancer and the other one from a ruptured aorta. I had a good relationship with both of them and felt the losses deeply.

How did this affect my studies? Well the double loss came at a time when I had just received feedback on my mini-dissertation. Both examiners had written extensive comments. I did not even read them carefully. I thought there was no way I would be able to address their concerns. The mini-dissertation lay on my desk for over a year, uncorrected.

I just could not pick it up and make the changes. I did not believe in myself that I was able to do anything. At a time like this in my life, all that lay between me and getting the MSc was the completion of the mini-dissertation. It was a dear colleague of mine in academic development unit, who, each time she came into my office, kept on asking me when I would complete. Eventually I gave her the documents and said "Please advise me what to do here. I just cannot believe that I can do it". She read the comments through and said "Take the comments one line at a time and respond to them". From what she could see, I had the ability to make the changes and resubmit.

For that whole year, no-one from the university where I was registered had contacted me. My supervisor had left the University. She was in a new job and I knew that if I was to be awarded the MSc, it was up to me.

It was this colleague from my own institution who assisted me to eventually decide to spend one week to make the necessary changes and resubmit. She believed in me.

I felt that this was a negative experience for me that ended up positive. We made a connection and since then, she has been my mentor and friend. I finally graduated with a Masters degree in Science (Chemical Education). I have included photographs of my family – my husband and two sons, and me at my graduation in figure 26.



Figure 26: My family at my MSc graduation

In 2002, my Technikon merged with another Technikon and we became the Durban Institute of Technology. When my two-year contract position came to an end, the Institute extended it and eventually converted it into a permanent position in academic development. So I became fully involved in advising and guiding academic staff in their learning, teaching and assessment practices. It was during this time that there was another change and the Institute became a University. The requirement to teach in a university was that I had to read for a Doctorate. The same colleague who influenced me to continue with my Masters study was the one who approached me to read for a Doctorate in Technology with a specialisation in Education, and she became my supervisor.

I was taking yet another risk. I registered for a doctorate in the last year that the qualification was offered at the Institution and also at a time when there was huge uncertainty regarding my position in the academic development unit. It was not only I who was under threat. All of us who worked in the unit were challenged in the same way because of the merger and the status change. The unit had no permanent head of department, no defined structure and hence was not recognised by the university even though we provided valuable academic development support for the academic

staff in the Institution. In the midst of all this, I was asked to lead the unit. I was excited by the opportunity presented to lead the unit but was also fearful of failure I was taking yet another risk.

I still had much to learn. I experienced mixed emotions. I drew on my deep reserves of feeling and intuition as I was faced with leading the people in the unit. I had to discover my aptitude and demonstrate 'an intuitive feel or grasp' to lead the unit. Many of the decisions I made were based on my intuition which I felt in my whole being not only in the frontal cortex of my brain that was associated with rational thinking (Robinson and Aronica 2009:22). I had the passion. I had the opportunity and the attitude to learn all I could, so soon I was in my *Element*. The relationships with my colleagues were life-affirming and we shared some deeply emotional times. It was during these times of intense emotion that I truly learnt about myself as a leader, and how to lead.

One of these times was in 2007 when the staff and I were told that we had to lose at least six staff from the unit which we believed was already too small to fulfil all the professional development work that we were required to do in the university. The staff and I were angry and upset by this proposal which would see the staff relocated to the faculties who did not have suitable space for them. The six staff were to leave the building that we all occupied as a unit. There was no space for them in the building which was to be taken over by another unit. I knew that it was wrong since the staff were not given any opportunity to present their point of view. However I knew that we risked losing staff from the unit unless I used the opportunity to find a new perspective on the situation. I had to be creative and innovative about the situation. I recalled that the unit had unused space in another building on a different campus that was not well utilised, and of which the University Senior Management were not aware. I thus proposed to Management that we would move out the building to another space. They were happy to get the space they needed and were no longer interested in moving the staff to the Faculties. So my intuition was correct in that it was not necessary to lose the staff. I had learnt that it was important to trust my intuition. The life affirming relationship with my colleagues grew more and more and we became very supportive of each other as we grew to trust each other.

Conclusion

In this chapter, I have presented an account for my understanding of learning as a biochemical process in relation to my own journey as a learner. I have shown how during critical incidents of my own learning I have experienced “thought-filled emotions and emotion-filled thoughts” (Conolly 2001:126). My learning has involved the taking of risks, learning the rules of the game to succeed in my studies, experiences of rejection and the love-filled joy and joy-filled love of family and collegial support and a sense of achievement.

I believe this account is significant as I am reminded by Kathleen Pithouse-Morgan, a scholar of self-study,

A thorough and contextualised investigation of the self can inform educational engagement in general – as the general is embedded in the individual (Pithouse-Morgan 2010).

Also, from the Krishnamurthi quote at the beginning of the chapter, “for it is within each one of us that the whole of existence is gathered” (Krishnamurti 1968:17).

Through engaging in the emotional impact of critical incidents, I have come to understand myself and the process of learning in deeper ways (Ellis and Bochner 2000).

Chapter 5

How does learning happen?:

My Spiritual learning story

For the Anthropos,
that mysterious composite of flesh and spirit,
reflects a latent spirituality in [her] gestes and in [her] behaviours.
Marcel Jousse

Introduction

In this chapter I provide an account of my evidence of the biochemical nature of learning from the perspective of spiritual learning and through a spiritual lens. From my lived experience as an ordained priest and teacher in society, I share what matters to me, what I care passionately about and the difference I want to make in the world as a follower of the teachings of Jesus. I provide evidence of not living out my values through telling my emotion-filled story which leads to an identification of my concern of lack of *whole-being-learning* of Christian Spirituality. I use multimedia narratives to share how activities that I undertook to address my concern have influenced my own and the spiritual *whole-being-learning* of others. From the evidence of my influence I experienced as well as my influence on the Christian Spirituality of others, I am able to generate my spiritual living theory.

What really matters to me? What do I care passionately about? What kind of difference do I want to make in the world?

I have been ordained priest in the Anglican Church within the Diocese of Natal, Durban since November 2011. My faith journey to the ordained priesthood has been one of active growth in my Christian Spirituality. It matters to me that I am aware of my spirituality, and as such, I am passionate about my development of my spirituality. It follows then that the good hearth and development of the spirituality of others is also my concern.

I believe that spirituality is “vital and non-negotiable lying at the heart of our lives” (Rolheiser 1998:6). It is vital and non-negotiable because I believe we are each born into this world with a spirit that cries out and is either life-giving or destructive. Hence, I believe our spirituality shapes our actions in life.

There are many definitions of spirituality but I regard

...spirituality [as] not about serenely picking or rationally choosing certain spiritual activities like going to church, praying or meditating, reading spiritual books, or setting off on some explicit spiritual quest...[spirituality is] what [I] do with [the fire that burns within me], how [I] channel it, is [my] spirituality...it is about being integrated... within community ... in harmony with mother earth... (Rolheiser 1998:6) .

In Christian Spirituality, I believe that the 'fire that burns within me' is the energy of the Holy Spirit that is like a fire within me that moves me to act. This fire within me is the warmth I experience as I believe I am in the presence of God. My link to this fire burning within that moves me to action reminds me of two biblical callings. The first is the calling of Moses in the book of Exodus Chapter 3 and the second is the day of Pentecost as recorded in the book of Acts chapter 2. (RSV 1975).

Moses was called by God as "the Lord appeared to him in a flame of fire out of the midst of a bush" to lead the Israelites out of Egypt to the promised Land (RSV 1975:Exodus 3:2). The Israelites were not living in harmony with the Egyptians and they were suffering under oppression. Moses was called to approach Pharaoh for the release of the Israelites. Through the power of the Spirit of God within him, Moses was able to work together with Aaron and others to lead the Israelites out of Egypt. Moses was able to act based on his spirituality, with success.

On the day of Pentecost in AD 33, the disciples who had followed Jesus teachings were gathered in one room all full of fear. They were fear-filled in that Jesus, their teacher and King, whom they believed to be the Messiah, had left them and gone up to heaven. They felt alone and bewildered. As they gathered, they experienced "tongues as of fire, distributed and resting on each one of them. And they were filled with the Holy Spirit and began to speak in other tongues, as the Spirit gave them utterance" (RSV 1975:Acts 2:3-4). All those gathered there were moved to act, to "integrate within the community" and go out to be witness of Jesus. They experienced a growth in their spirituality.

As a spiritual leader in the church and teacher in society, I am also passionate about the spirituality of others. As a teacher, I believe in, and am inspired by, the greatest teacher who ever lived, the person, Jesus (Goodier 1943; Riley 1997; Jousse 2000; Stanton 2002).

I have observed how the *11 Methods of Jesus the Teacher* (Goodier, 1943) have been used by many teachers whom I consider to be good teachers. The methods used by Jesus according to Goodier (1943:497) are:

1. Jesus introduces the lesson with a question or problem.
2. Jesus capitalised on the present situation.
3. Jesus taught from the known to the related unknown.
4. Jesus recognised the importance of individual differences and adapted his instruction to the needs of the individual.
5. Jesus saw the latent possibilities in the individual and sought to arouse a desire to develop those possibilities.
6. Jesus' teaching was marked by its naturalness.
7. Jesus as a pedagogue made things easily comprehensible
8. Jesus teachings were graphic and vivid - using nearly forty parables
9. Jesus used figurative language such as the proverb, the epigram, the paradox and the hyperbole.
10. Jesus used humor in his instruction
11. Jesus had courage in presenting his message in a face of opposition.

I remind myself that Jesus challenged the hegemony of the day and seized teachable moments as a teacher, and look for ways to do the same.

Jesus was accompanied by his twelve "Galilean artisan-paysans" disciples (Jousse, 2000:51) Thus the disciples learnt as they interacted with him face-to-face and heart-to-heart on a daily basis and as he showed care and interest in the difficulties being experienced by the peasant population "in the traditional agrarian society of first century Palestine" (Botha 1998:34). These difficulties included poverty, poor health, and corruption, and discrimination, prejudice and injustice of every possible kind (Jousse, 2010:234ff; Matthew, V, 3-9, 10-12; Luke, VI, 20-26). Jesus' aim was to win "a pedagogical Civilising war" (Jousse, 2000:51) against these inequities and injustices.

Jousse identified Rabbi Ieshoua, the Galilean - for me Jesus, The Teacher, - as "A teacher-by-imitation, a mimo-teacher, a rhythming-teacher" (Jousse 2004:109). His disciples learnt by 'imitating' him through listening to, and watching, him as he taught. Jesus' disciples, or as Jousse prefers to call them, "Apprehenders" (Jousse, 2000:173 inter alia), learnt "by heart" (Jousse, 2000:18 inter alia) from observing him,

and recorded their learning and understanding in memory, being orally traditioned in the use of the mnemonic oral-style (Sienaert 1990; Jousse 2000; Conolly 2001; Jousse 2001b; Jousse 2010), and not schooled in the literate mode. Jousse calls the disciples “Apprehenders” as they accessed the learning with their whole bodies and souls as they listened, watched and then recited and repeated the gestes of Jesus using the mnemonic oral-style (ibid).

Jesus’ method of teaching was to speak to the many who followed him and gathered where he stopped, using the mnemonic oral-style (ibid) with which both he and his listeners were familiar, given their common peasant origins. Jousse identified the origin, nature and operation of the mnemonic oral-style, through his anthropological and gestural study of numerous communities all over the planet, and with special reference to the peasant communities into which he had himself been born and by whom he was raised (Sienaert 1990; Jousse 2000; Conolly 2001; 2001a; 2001b; 2004; 2005; 2006; 2010).

What are my values and why?

Loving, kind, respectful, considerate, impartial and sincere treatment of others are strong spiritual values to me. As a Christian, I have learnt from the Bible that I am to do good to all (Gal 6:10), have love for both my neighbours and my enemies (Matthew 5:43), show respect to everyone (1 Peter 2:17), demonstrate [sisterly] kindness (2 Peter 1: 5 – 7) and be considerate, impartial and sincere (James 3:17).

I believe that there is a need for more love in the world. All of us, not only Christians, should all be following Jesus’ commandment to love God and love our neighbours as ourselves. As a leader in the Christian church, I value loving relationships where each person is allowed to be authentic in that relationship. My love is based on the commandment of Jesus to love each other just as He loved us (RSV 1975: Matthew 13:34). God loved us so much that He sent Jesus, Son of God, in flesh, to live amongst us in the sinful world (RSV 1975: John 3:16). Jesus loved us so much that he gave His life for us on the cross. After his death and resurrection, God the Holy Spirit was sent to comfort, counsel and lead us to all truth (RSV 1975: John 14:15-17). I know and experience that love and comfort of God in my life especially in my

pain and suffering. As a disciple of Christ and an ordained priest in the church I believe that it is important to share the love of God amongst all creation who are groaning (RSV 1975: Romans 8: 22). It is not easy to do so especially in a world where there is a feeling of so much brokenness, hurt, mistrust, anger and hatred. I believe though that I can make a difference in peoples' lives through sharing that love. I believe that love can be shared through prayer, and through action. "Love bears all things, believes all things, hopes all things, endures all things" (RSV 1975: 1 Corinthians 13:7). I believe love is the emotion that Jesus Christ commanded us to share with each other.

Furthermore, I value having fun or experiencing the joy of my Lord, Jesus, in my life. I believe that life is not all about seriousness. In the book of Psalms the writer expresses " [God] has put more joy in my heart" (RSV 1975: Psalm 4:7) and in Psalm 16 David talks about how by being with the Lord, his soul rejoices and he has fullness of joy. Jesus himself in the Gospel of John says to us " these things I have spoken to you, that my joy may be in you, and that your joy may be full" (RSV 1975: John 15 :11).

I value loving other people and being in their presence, feeling their dynamic energy as they interact. I value not only being in their presence but also challenging them to develop and grow in all the dimensions of their being – spiritually, physically, emotionally and mentally. I value supporting and encouraging people as they experience difficulties and challenges in their lives. I value being impartial and not being judgemental of people and their ideas as they interact with others and as they seek meaning for their own lives. In my own life and work, I value loving what I do, having a passion for what I do and having fun and pleasure in all I do. Having fun and pleasure in what I do makes me feel good. I experience a joy-filled love and a love-filled joy.

What is my concern? Why am I concerned?

I am concerned that people are experiencing a lack of joy, passion and awareness of God in their lives.

They are not spiritually active in the life of the church and society. I am concerned that their spirituality is not fully active and not fully biochemically (in)formed.

Spirituality is biochemically (in)formed and I believe that, I as a human being, experienced the reality of the Law of Interaction (Jousse 2000), viz.

‘The Acting One – acting on – The Acted upon’

in the form of

‘The Loving one – loving – the loved one’,

ex-pressed in the algebrised form, as

‘God loves me’.

I would like to see a community and society in which we live out our spirituality and all “*feel good*” and “*feel God*” (Pert 2006). I want to provide a space and opportunity for people to share love, show humility and be of service to each other as they each learn, move, change, develop, understand and grow to be who they were created to become, with all their potential fully realised.

What evidence do I have for my concern?

My evidence for my concern about the lack of joy-filled love and love-filled joy in the lives of others stems from my own experience. I see that others are experiencing the same kind of a lack of joy-filled love and love-filled joy that I used to experience. As I critically reflect on my journey of faith, I realise that I have had a significant incident in my life when I experienced personal spiritual growth, learning, movement, change, development and understanding. I became aware of my own spirituality.

How did I discover that God loves me?

In July 1993, I woke up one winter’s morning and discovered to my greatest despair, that my face was paralysed on the left side, my left eye was unable to blink, my mouth was drooping to the left and I could not hold anything in my mouth: food and drink dribbled down my chin. My eyesight was affected. My speech was slurred. My eye could no longer blink involuntarily and hence lubricate my eyeball. I had to wear an eye-patch over my left eye to prevent it from drying out.

I was diagnosed with Bell’s Palsy. The ear, nose and throat specialist informed me that there was no medical cure for Bell’s Palsy and that he was not sure whether my face would ever return to normal.

I experienced extreme emotional discomfort as people stared at me particularly when I was in the classroom as a Chemistry lecturer. I went into a state of depression and questioning of God. I did not feel the love of God. I believed that I was just not good enough to be a lecturer any longer. I feared that I was going to lose my job. I grappled with the same spiritual questions that Parker Palmer says we all have as we yearn to connect with 'the largeness of life' who for me I believe is God: He alludes to the questions in *Let Your life Speak- Listening for the Voice of Vocation* (Palmer 2000) and presents them as follows in Educational Leadership:

Does my life have meaning and purpose? Do I have gifts that the world wants and needs? Whom and what can I trust? How can I rise above my fears? How do I deal with suffering, my own and that of my family and friends? How [do I] maintain hope? (Palmer 1999: 6-8)

I prayed. I tried to connect with God in my prayers for over three months. I cried out to God seeking answers. Did he really love me? How could this happen to me?

Even though I attended church services of worshipping and praising God, I prayed and I meditated on the Bible as the Word of God I had not experienced God's love in my situation with Bell's Palsy. I came to doubt that my faith was strong enough.

The structure of my Christian faith resonates with the fourfold structure of faith that John Macquarrie presents as firstly, a commitment to the values of Jesus Christ; secondly a confession that Christ is the Son of God; thirdly a belief that Jesus Christ is a real and significant person; and fourthly that faith is experienced as a response to or an awakening to "a reality outside of ourselves claiming the allegiance of that which is most deeply within ourselves" – it is not something we create ourselves, it is grace (Macquarrie 1973). My lack of faith meant that I was in need of committing to the value of Jesus Christ as loving God his Father. I was in need of believing that as a real person he was concerned about my health and my desire to be healed, made whole. I was in need of responding to the grace of God through Jesus Christ, upon my life.

I exercised the value of loving God through His son Jesus Christ and in the power of the Holy Spirit. I used prayer and meditation as a form of communicating with God whom I loved, seeking answers to my situation. We as the Christian community believe that our Lord Jesus brings health, life, joy and peace and that he "came that [we] may have life , and have it abundantly" (John 10:10 RSV 1975). I believe that just as Christ healed over two thousand years ago - according to the Gospels in the Bible (RSV 1975), he can still heal today through priests, the laity as well as doctors,

nurses and other medical staff. I believe that God works through prayer and the rites of Laying on of hands and Anointing as well as through the medical fraternity. In this case, of my Bell's Palsy, I started off seeking healing through the medical fraternity.

During September 1993, about three weeks after the medical specialist had pronounced that there was no medical cure for my condition, the local Anglican church of which I was a member held a healing service on a Wednesday evening. It is normal for the church to have healing services for the sick in the community. By this stage of my illness, I felt more comfortable attending the Wednesday evening regular worship services at the church than Sundays. Fewer people attended the Wednesday services and I did not have to endure so many people staring at me because of the eye-patch and my drooping face.

Trusting in God's unfailing love, that he would use this sickness for my own spiritual growth and to his glory, I prayed before going to the healing service and I said "Lord, according to your will, may I be healed".

When my husband and I arrived at the church, it was very full with many more people than those that usually attended. Many of them came seeking healing. The priest who conducted the healing service was a gentle giant of a priest in whom I detected a deep peace and serenity. I believed that Christ was truly living in him. The atmosphere in the church was also very calm, like the calm felt before a storm is experienced. I felt the mystical presence of God in that place. I felt filled with a deep sense awe and wonder of God, a sense of humble submission to his power. I felt a sense of expectation deep within me as the service reached the point when the priest called all those in need of healing to the altar rail. The priest held a bottle of holy oil in his hands to anoint each one of us as we knelt at the altar rail.

As I stood up from the pew that I was sitting in, I felt a trembling throughout my physical body: I was shaking involuntarily, and markedly so. I was nervous and excited at the same time. I am not sure why I was nervous and excited. Maybe I was nervous about the healing and how I would response to the infilling of the Holy Spirit during the laying on of hands and the anointing. Maybe I was excited about the anticipated healing that I was going to receive. My heart was beating very fast in my chest. I became oblivious of the people in the church. My focus was on getting to the altar rail. As I walked into the centre aisle of the church, I felt tears rolling down my right cheek. I used my hand to wipe away the tears on that cheek. I could not feel anything on my left side of my face. There were no tears on my left cheek. My left eye could not tear. I felt strange crying with one eye only. As I came up to the altar

rail, I experienced an overwhelming uncontrollable desire to cry out loud. I cried. I sobbed. My whole body shook uncontrollably all the time. The gates of my deep-seated emotions were released in floods of tears as I knelt at the rail. I did not understand at that time what was happening to me.

I cannot remember exactly how many other people were at the altar rail. I was the last person along the altar rail I kept sobbing all the time even up to the point when it was my turn for the priest to stand in front of me and pray. I could barely utter the responses to the priest as he asked me to affirm my belief in the power of God to help me. At that point I closed my eyes to experience the spiritual moment and not be distracted by anything. I desired spiritual wholeness, a spiritual connection with God. I felt the priest placing his thumb with holy oil on my forehead. He signed my forehead with the sign of the cross whilst praying:

Delysia, I anoint you with oil in the name of our Lord Jesus Christ. May our heavenly Father make you whole in body and mind, and grant you inward anointing of his Holy Spirit of strength and joy and peace. Amen (Church of the Province of South Africa 1989: 506).

I recollect that I felt the pressure of the priest's thumb on my forehead for a long time after the congregation had said "Amen". By then my crying had stopped and I felt at peace, but the pressure of the thumb was still on my forehead and my eyes were closed. When I opened my eyes, I expected to see the priest still standing in front of me as I still felt the pressure of his thumb on my forehead. However, the priest was not standing in front of me. He had returned to the altar and I was looking at his back. So whose thumb did I feel on my forehead still applying pressure? It was not a physical thumb of anybody. There was no physical being standing near me. Then I became aware that I had a feeling of such joy, peace and serenity within me. There was definitely a sense for me that it was God through the power of the Holy Spirit that was touching me and making me whole. I am reminded of the words of a song that we sing in church that has the following lines:

He touched me,
Oh He touched me,
And oh the Joy that filled my soul
Something happened,
And now I know,
He touched me and
made me whole.

I felt that I could also identify with the blind man, the bleeding woman and many others that Jesus healed. When I sat down in the pew next to my husband, he asked me “How do you feel? What happened up there? Why were you crying?” I did not know what had happened so I replied “I do not know and do not really understand why I was crying”. I wondered what was the cause of my tears? What had triggered that physiological process in my being? Was it the release of pent-up emotions of fear of possibly losing my job, fear of the possible social isolation? Was it the emotion of joy and excitement of possible physical healing? I did not know.

As I was seated there, I stroked my left cheek with my fingers. My face still had no sense of feeling on the left side. I did not have a mirror and was unable to see whether my face and my mouth were still drooping. “Oh my!” I thought. So I asked my husband if my face and mouth were still drooping. He said that it looked like my mouth was not drooping that much but my face was still looking different on each side. I started to feel excited and wanted to get home, to a mirror, to make sure for myself that there was a change, a healing. I felt the fears of the possibility of losing my job and the social isolation lifted off my shoulders. I was no longer fearful. I felt that I had the strength to carry on. I was no longer felt depressed. But the question of whether both sides of my face were healed and whether I would need to wear an eye-patch still remained. I could not wait to get home.

When I returned home after the service and looked in the mirror, what I saw confirmed for me that my mouth was no longer drooping. I drank a cup of coffee and I noticed a difference in my mouth: I was able to sip from the cup without it being messy. I was able to use my lips fully, not just suck on the straw through the right side of my lips. My words were much clearer. In my opinion, I was healed. But I still needed to go to the medical specialist for his assessment as my left eyelid that was unable to blink started drooping and I still felt very little sensation on the left side of my face.

The earliest appointment that I could get with the medical specialist was on the Monday of the following week. I continued to monitor myself each day after the healing service. I noticed my speech improving a bit and my eye still looked like a lazy eye with the eyelid still drooping half closed. I continued to massage my face.

I could not wait for Monday’s appointment.

The appointment was in the morning so I went straight from home to the specialist’s rooms. I went alone. As I walked from the car park to the surgery, I was constantly

touching and massaging my left cheek, trying to activate some more feelings in my face. I was pulling my mouth from side to side checking that both sides of my mouth were able to move together. I had removed the eye-patch. I was excited to hear what the medical specialist would find and say to me.

The receptionist greeted me in her cheerful manner as I entered the door. "Good morning, Mrs Timm. You are looking rather cheerful this morning. You are not wearing your eye patch." She had noticed how happy I was feeling and that I was no longer wearing the eye-patch. She did not say anything about my droopy eye. I replied "Good morning to you to. Indeed, I am feeling good. I am actually feeling blessed in that I believe that this Bell's Palsy is on its way out, no longer going to bother me". I hesitated a bit though after that and said, "But my eye seems to be doing its own thing now". I was hesitant because I was not actually sure how long it would still take for the effects of the Bell's Palsy to be completely gone, for my eye to be back to normal. I took a seat in the waiting area all the while still touching and massaging my face. There were no other patients in the waiting area. I was the next patient to see the doctor.

It was not long when the specialist's consulting room door opened and he was available to see me. I took a seat in my usual chair. "So how are you feeling this morning, Mrs Timm?" the specialist asked. "I was feeling very happy and better until I walked in here" I said to him. "I am not sure now how I am feeling as I will wait first for you to assess me. My face is still without much sensation and my left eyelid has now started drooping." "Oh," he replied, "but something definitely has improved in your condition. You are speaking much more clearly and your mouth is no longer drooping."

He came closer to examine me as I remained seated. In silence, he touched my face and examined my eye. He asked me to open and close my mouth a few times. I noticed a confused look on his face. As he turned to walk back to his desk, he asked "When was the last time I saw you?" I replied "Well doctor, it was about a month ago when you told me that it would take anything up to eighteen months for my face and eye to come right, if at all".

He looked at my file open on his desk, still with a confused expression on his face. "Now what?" I thought to myself. "I am absolutely astounded"! the doctor said after a long pause, "I cannot believe that you have improved so much since the last time you were right here in this chair! You have healed so quickly". To which I responded, "Doctor, do you believe in miracle healings?" I had noticed a rosary of prayer beads

of the people following a Roman Catholic faith on the shelf behind his desk. I proceeded to tell him what I had experienced the previous Wednesday evening. From my account and what he saw in front of him, the doctor's response was " Well, I cannot deny the physical evidence of this healing in your body. It is indeed for me a miracle healing. I did not expect to see this at all from my previous experiences with similar patients!"

I was completely healed. There was no evidence of Bell's Palsy, and I have never had a relapse and believe I never will. I was healed by the power of my loving Lord, Jesus Christ, my Saviour.

I believe that my pain and suffering was a necessary part of my listening to and hearing God shouting in my pain and thus necessary for my spiritual growth. After my physical healing experience, I was led to discover my "sense of meaning, purpose, values and religious practices" which are all spiritual factors in life (Dossey 2009:38). Books, over and above the Bible, that I read, which helped me towards finding a sense of meaning and purpose in my life were *Mans search for Meaning* (Frankl 2004), *The Purpose Driven life – What on earth am I here for* (Warren 2002), *Reclaiming the Body in Christian Spirituality* (Ryan 2004) and *Your Life in Rhythm* (Miller, B 2009). I believe something else happened during my healing, I felt drawn to be a channel of God's redemptive love.

My personal story of my experience of spiritual energy is linked to deep feelings of emotion that I could never explain. Why did I cry uncontrollably in the church during the healing ceremony and process? Was the emotion part of the "fire burning within me" (Rolheiser 1998:6) Was I experiencing that urgent longing, *eros* for God in my life? Was there a biochemical change happening within my body (Pert 1999) due to these emotions? Or were the emotions a result of the biochemical change? Why had I doubted God's love? Was it so that I could go through this loving experience to enter a new level of spirituality in my life? Through my own story of growth and healing, I experienced the coming together of God, or Holy Spirit and the emotional reality of my physical body or of being glued together.

As I reflect on these questions with my colleague, Joan, she prompts me to find out what could have been the possible causes of Bell's Palsy? I was told by a medical specialist – in layman's terms- it was a 'cold in the nervous system that had caused

the paralysis'. There are possible viral infections that also result in Bell's Palsy- there is however no definite physical cause for the condition. I believe that Bell's Palsy is one of the emotion driven conditions in humans. During the time that I got Bell's Palsy, I was trying to deal with a family crisis that I perceived to be huge in my life. As I reflect on the family crisis, I realise that it was about a lack of love in relationships, a deep-seated, paralysing coldness.

I had experienced intense emotions of personal fear and depression during the Bells' Palsy which changed to feelings of love, joy, peace and serenity within me after the healing. My emotions "within [became] more valuable than the [appearance] without" (de Chardin 1959:62) as I experienced the physical healing. I "felt good and felt God" (Pert 2006) I believed that I was healed. I was physically healed as the paralysis on my left side disappeared. My mouth could close as I ate food and drank liquids. My left eye was blinking involuntarily again. My physical body had learnt to function optimally again. My gestures had changed from inactivity to their automatic reflex action. My spiritual energy was increased. In retrospect I changed from believing that I was 'Just Not Good Enough' to being 'Absolutely Good Enough' through that connection of my body, my mind, my spirit and my heart. I was able to "do things which [kept me] energised and integrated, on fire and yet glued together" (Rolheiser 1998:17).

I had experienced spiritual growth. I had understood. I believe that 'to understand is to love' - I had learnt to love again. As I love God and love others with whom I come into contact, I am able to understand them more. I had experienced a joy-filled love and a love-filled joy in my healing encounter. Jousse provides me with an explanation for the intense embodied experiences:

...man will nonetheless strive to Mime the actions and interactions of the invisible world through the intermediary of his corporeal-manual being. Man senses, moreover, that this is more or less how the beings of the invisible world proceed then they, in turn, try to reveal themselves to him. It is logical indeed that they can only do this by making the normal, ordinary 'actions' of the visible world 'act' in an unusual and astonishing fashion. For it is in no way illogical to believe that invisible beings are more 'powerful' than visible beings (Jousse 2000:77).

I believe that, I as a human being, experienced the reality of the Law of Interaction (Jousse 2000), viz.

‘The Acting One – acting on – The Acted upon’

in the form of

‘The Loving one – loving – the loved one’,

ex-pressed in the algebrised form, as

‘God loves me’.

How does God love me? The characteristic geste of God or his Essential action is loving and there are an indefinite number of Transitory actions that spring forth from ‘The Acting One, God. These Transitory Actions of loving are intussuscepted within the fibres of ‘The Acted Upon’. I, as ‘The Acted Upon’, then express this loving through the gestes of kindness, patience, forgiveness, courtesy, humility, generosity and honesty (Chapman 2008). Gary Chapman, who has written on *Love as a Way of Life* (Chapman 2008) has expanded on the expressions of each of these characteristics in the following way:

Kindness – discovering the joy of helping others

Patience – accepting the imperfections of others

Forgiveness – finding freedom from the grip of anger

Courtesy – treating others as friends

Humility – stepping down so someone else can step up

Generosity – giving yourself to others

Honesty – revealing who you really are .

What have I done about my concern?

In order to move towards a more active spirituality as a form of *whole-being-learning* - movement, change, growth, development, understanding - in the life of the church and society, I have engaged, and continue to engage, in activities for my own personal spiritual growth: I have become a learner of Christian Spirituality. I serve others, as part of my teaching ministry, by providing and sharing in opportunities for them to grow spiritually. As a teacher, I have a passion to connect, I feel what Parker Palmer describes as a teacher who feels a

deep kinship with [Christianity]; [I wanted] to bring [others] into that relationship, to link them with the knowledge that is so life-giving to me ...to share [my] values and [my] vocation (Palmer 1993: x).

I have undertaken and participated in a number of initiatives to actively learn my own spirituality and help others to actively learn their spirituality. These initiatives include the following which are not in a chronological order:

I am studying for a Bachelor of Theology degree

I have become an ordained member of the clergy

I participate in a liturgical dancing group

I teach floral arrangement and participate in floral arrangements within the church

I host and facilitate a group bible study every week

I facilitate and participate in Quiet Mornings for Women

I identified people with whom I had interacted in these initiatives to give me written feedback on three questions (see Appendix C: written responses of participants)

1. To what extent and how did I influence your learning during our time as.....?
2. To what extent and how did you influence my learning during our time as....?
3. Can you describe the emotions you experienced during these learning moments giving instances or examples as appropriate

I reference the audio/video interactions with the participants using the following format: (SOP¹² number, name, date, exact time of utterance in minutes). I omit the time for the written responses as they were a maximum length of a short paragraph. I had a conversation about the questions with Faith and Fr Terry which I audio recorded. The people who responded to my three questions in writing are tabulated below.

Initiative	Name of Person who responded	SOP number ¹³
Theological Studies & Bible Study	Anton	2

¹² SOP – Schedule of Participant in Appendix B

¹³ This number corresponds to the schedule in Appendix B

Liturgical Dance	Charys	6
	Heidi	7
	Lola	8
Floral Arranging	Dawn	9
	Hylton	10
	Charys	6
Bible Study	Charys	6
	Fiona	11
	Des	12
Quiet Morning	Judy	13
	Joy	14
	Alice	15
	Cheryl	16
	Lorraine	17
	Des	18
	Linda	19
	Joan	20
	Marge	21

I extracted phrases/parts of the responses to the questions that showed me the emotions and feelings experienced and learning, movement, change, growth, development, and understanding of spirituality.

How did studying theology influence my *whole-being-learning* of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?

I registered as a part-time student in January 2004 for a Bachelors degree in Theology with a correspondence college. I enrolled for these studies as part of my Fellowship of Vocation process in the local church on the advice of my local parish priest, Fr Terry. My understanding and knowledge of Christian Spirituality before I registered was limited to what I had learnt about twenty-eight years earlier, as part of my Confirmation course.

Fr Terry and one of my fellow students, Anton, encouraged and supported me during my studies. Anton and I formed a study group in the parish as a support to each other. We meet at least once a week to discuss the questions and tasks for the assignments. My formal education up until this point was focussed on Chemistry or Chemical Education, so the world of theological education was very new to me and different to what I had studied before. I was very excited about the course since it provided me with an opportunity to register for courses that were relevant to my practical ministry in the church and for my spiritual growth (See the curriculum outline in Appendix E).

I found that all the modules that I chose contributed to my spiritual growth especially doing the modules *7003- Growing spiritually, thinking theologically*, *7377- Teaching the faith*, *7372- Proclaiming our Faith* and *7401- Integrating Theology and Ministry*. These modules were very practical in nature. The written tasks in the assignments required me to reflect and report on projects/workshops/discussions in my local church and to interact with different types of people. I experienced a course that was not 'bookish.' I was able to focus on the "explicit gestes of what was real" (Jousse, 2000:129). Jousse describes a "bookish" course as one that :

keeps [me] focused on the mechanisms of writing and not on the explicit gestes of what is Real. To pose our greatest human problems in the medium of writing only is to distort them from the very start (Jousse 2000:129).

I was able to be face-to-face and heart-to-heart with the reality of spirituality and theology as it informed, besieged and constrained me. My brain, hands and whole body were mimers and re-players of interactions I had with my priest, fellow students and members of the Parish. The studies influenced my sermons that I taught in the church.

One of the first subjects that I registered for was module *7372- Proclaiming our Christian Faith*. I registered for this course since I believed that as a teacher I had the spiritual gift of teaching and the course would equip me with the necessary knowledge and skills to be able to share sermons in the church. I was able to share my knowledge as a result of my studies during sermons. In my sermons, I aimed to raise people's awareness of their own spirituality by relating to their lives and experiences, by challenging them directly and by surprising them with creative

innovations. I responded to my own spirituality during my sermon preparation and delivery. The more I responded, the more readily my spirituality informed what I had to say.

My process of sermon composition has emerged along the following lines. On Monday, I start by praying and reading the Bible verses that have been set for the day according to the lectionary (Anglican Church of Southern Africa 2011). I pray and do these readings numerous times for a few days before I actually start writing the sermon. As I do these readings, I try to understand what the reading is about by using commentaries and various versions of the Bible. In my prayer time I listen for what God is saying to me is relevant for me in these readings. I become more aware of my own life experiences, past and present, that may relate in some way to what I have read. I reflect on the experiences of the parish, the parishioners and the community in relation to the readings.

I normally have many conversations with myself about the possibilities for the sermon. Some of the thoughts I feel good about and some of them just do not seem to make me feel like I get the point of the readings. I always feel that there is a direct message from God, firstly for me, then for the congregation in all my sermons.

By Saturday afternoon, I am ready to compile a mind-map with all my ideas for the sermon. The ideas that finally get included in the sermon are those that make me “feel Go(o)d” (Pert 2006) deep in my stomach, and address issues tugging at my heart. Normally I end up with about three main thoughts to explore or expand upon. I jot down a few paragraphs around these thoughts and read over them quite a few times to get the geste of the message. I need to feel the words in every fibre of my being before I am comfortable with standing up and delivering the sermon. At times I go to sleep on a Saturday evening with what I believe to be the completed sermon only to awaken at day-break with a strong message from deep within my being to change the sermon. And until I sit down and make the changes, I do not feel at peace within myself. I have found over the years that I have been teaching from the pulpit without counting words or timing myself beforehand, when the sermon is right, the duration during the service is no more than 20 minutes.

Before I stand in front of the congregation to deliver the sermon, I pray first for guidance, wisdom and inspiration. I never read my sermon from the words I have

written down. I use the notes as a guide to remind me of the main points. Instead I speak freely, expressing myself as I feel is the best expression in response to the energy I sense from the congregation. I respond to their presence which is life-giving. Quite often I find that I am unable to stand still. I need to move my arms, my body, and make eye contact with the congregation. I also need to use different objects as far as possible in my sermons so that people can relate to tangible things and remember what was said. I include some relevant humour to make the people feel relaxed if it is appropriate. I also use different tones and inflections, in my voice, and pause, and vary the volume and pitch to keep their attention. I realise that there were times when I say things during my sermon that I have not planned to say at all, and some people tell me afterwards that they felt that they were very meaningfully directed to them. I recently started audio- and video-recording my sermons so that I could listen to what I have said, or rather what God has said through me. Perhaps there was a relevant word there for me which I had spoken but that I had not written down.



Figure 27: Delysia delivering her first sermon as ordained priest in Church

In the attached video-clip of the first sermon that I taught at St Augustine's Church, Queensburgh, on Sunday 27 November 2011, as a newly ordained priest, I am surprised to notice the spontaneous "corporeal-manual ex-pression" (Jousse 2000) in my style. Figure 27 is a photograph of the video which can be viewed on YouTube at <http://youtu.be/GRHo0Lh8NuU> or on the enclosed DVD.

The church has imposed a lectern with a microphone from which I am to teach my sermon as accepted practice and as such I am restricted to be fairly stationery and

unable to walk about as Jesus teaching in the mountains and from the boats on the lake of Galilee. Instead I make frequent eye contact with the congregation and occasionally look down to read the points that I have made. As I move within the space, I notice that I create a strong physical presence through my eye contact and spontaneous gestures. In this video, I see that there is evidence of the “dynamic vitality of [my] performance as an indivisible whole” (Conolly 2002:162). My movements are spontaneous expressions of my inner energy and intussuscepted Mimemes - my microscopic geste. I see that I spontaneously raise and lower my hands, I extend them forward and backwards and as I extend them outwards, I see that I also move my fingers to emphasise what I am saying. I see that my whole body moves from side to side and back to front, as I scan the audience, making eye-contact with them across the room. I see that I am able to engage with them during the sermon.

While the corporeal-manual ex-pression is evident in my style, I hear on the video that my speech patterns are also engaging. I hear that the volume of my voice increases and decreases, and the pitch of my voice rises and falls as I make significant certain points in my sermon and as I pose questions and challenges. I hear that my tone is very vibrant as I speak. I realise that there are times when I speak very fast with an upward inflection and am able to switch to a slower pace for greater emphasis. I note that I use times of silence after making a significant point or posing a question to engage the congregation. I hear the responses of the congregation during the sermon as I make a statement that prompts action from them. In order to ‘listen’ to the congregation, I have long moments of silence which are not pauses, but silences filled with meaning. I feel the energy of the congregation as I am talking.

I see and hear that my gestural and vocal movements are indivisibly part of the actual content of my sermon, and that this content is enhanced by the extra-linguistic corporeal-manual gestures and laryngo-buccal modulations, of pitch, pace, pause, volume, and inflection (Jousse 2000).

On reflection, I realise that I have included my written notes of the sermon preparation as well as the outline of the sermon, but I also realise that I have

included more information and aspects in my actual sermon than in the written text as I have felt led by the Spirit. I have included a copy of my written text I prepared for the sermon as appendix.....

I realise that I have experienced this 'led by the Spirit' as a force within me that rises up in my being from deep within me. I feel it deep within my gut and if I do not express it then I feel a loss in the rhythm of my sermon – at times there are no words to express what I am feeling and thinking.

I believe I capture everyone not only by what I say, but also by my actions or rather my corporeal gestures. I feel encouraged during my sermons from the responses of intense energy of love that I feel from the people whilst I am speaking and from their loving questions, comments and after the service. I am able to express my love of and for God in my sermons.

In the video-clip there is evidence of me challenging the congregation to think about what is happening in society and in their lives. Anton who has completed his theological studies and is a Lay Minister and a member of Fellowship of Vocation, believes that my sermons

“... are always informative, challenging, encouraging, and unquestionably messages from God as we as God’s people are brought to a better understanding on who God is, what His will for us is, bringing us to an understanding how we are to live our lives, as loving servants of God and loving neighbours to all of creation.” (SOP 2, Anton, March 2011).

Anton tells me that my sermons have influenced his spiritual growth in a positive manner. I am encouraged by Anton’s comment as he is very knowledgeable of scriptures and has a loving relationship with God.

Both Fr Terry and Anton, believe that I have challenged them. Anton says that “Delysia questions or interjections” that challenge his “mental boundaries” and get people thinking (SOP 2, Anton, March 2011). Fr Terry said that I “challenged people’s boundaries” (SOP 3, Fr Terry, March 2011, 9:24-9:37 mins). I am reminded as I listened to him that I felt the need to ensure that I truly understood what he was talking about whenever he was introducing something new or different in the church.

I was not happy just to do things without fully understanding what or why I was doing what was requested by Fr Terry. Only when I felt good about an answer did I stop asking questions. Conversely, I believe that is why I was able to entertain people that voiced their own opinions and asked questions about things that I had said. If they were unhappy, I felt that I needed to listen to them carefully and help them to be content and happy with what they were doing.

Faith confirmed the positive impact on her spiritual life of my sermons as she believed they were “inspirational (...) I hung on every word (...) I loved your sermons (...) you captured everyone (...) I was very, very moved and interested (...) (SOP 4, Faith, March 2011, 2:01 mins)... [they helped me] follow the way I should be living” (SOP 4, Faith, March 2011, 2:01 - 2:43mins). As Faith shared her feelings about my sermons, she spoke in clear distinct manner saying each word very deliberately and slowly and increased the tempo towards the end.

Faith is over 70 years old and did not believe her memory was too good, however she did remember how she was “startled” by the fact that I threw beans at them during a sermon. She recalled the action of me throwing the beans during a sermon about the parable of “the Sower” even though she could not actually remember the words I spoke at that time. The emotion of feeling “startled” that she experienced at that time of the throwing action ensured the intussusception of that action into her fibres of her whole being. That action was embedded into her and she was able to express her knowledge of what she had learnt. Her learning of spirituality was active and even when she prayed, she felt a “whole lot better (...) God has his arms around me” (SOP 4, Faith, March 2011, 6:26 – 31) which she expressed in a very loving and caring tone of voice. She experienced spiritual growth and “felt good” and “felt God” (Pert 2006).

I audio-recorded a conversation I had with Fr Terry on SKYPE¹⁴ about my influence on him and his influence on me during my studies and time in the parish. The full recording with Fr Terry and his wife Rita can be listened to on the enclosed DVD. Fr Terry and Rita, his wife, encouraged me and supported me by sharing their love for

¹⁴ Sadly, Fr Terry retired from the priesthood in October 2010 and emigrated to New Zealand.

God and people. At the time when I joined the parish in 1994, my family was the only 'coloured family' in a 'white parish' with very few Blacks and Indians. Generally, there was still a strong feeling of inequality amongst the racial groups and people were not very accepting of each other. I did not feel any racial tension towards me in the church, and felt loved by the people. I found Fr Terry and Rita to be very loving. Fr Terry was not afraid to speak his mind especially on matters where people were marginalised. He was the Rector of the parish and had an authority and responsibility in the church which many people felt they could not challenge and accepted everything he said and did. I believed that he was intelligent and well-versed in scripture and church doctrine. He made me think critically about things and was always open to a good discussion and debate about issues, I think partly because of his training as a lawyer.

Fr Terry recognised that my "relationship with Jesus was so strong" (SOP 3, Fr Terry, March 2011,1:07mins), emphasising the word "strong" by saying it louder and more forcefully than the other words, giving a sense of the strength of my relationship with Jesus. He believed that my relationship was so strong that I was able to be a peace-maker amongst the different race-groups in the church. I believe that I can only be a peace-maker, when I am sharing God's love with all.

Rita, his wife, believed that I was able to "make things clear" (SOP 3, Rita, March 2011,2:48). She was able to say that slowly and deliberately with a pause at the end before adding "for me" as she felt it very strongly within her being. When there was a problem, she would come to me about looking for help.

When Fr Terry commented on my discernment process to the ministry, he thought long and hard before responding. He spoke very slowly, choosing each word very deliberately and carefully. He saw the love I had "for Jesus (...) for the church (...) for things sacramental" (SOP 3, Fr Terry, March 2011,7:38mins). His expression of these words reiterated each time the love I had for the various things which is indicative of the Law of Interaction (Jousse 2000). I believe that as I experienced God's love, I was able to love others and as I loved them, they were able to love others and me in return as well.

How did participating in liturgical dance influence my *whole-being-learning* of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?

I accepted an invitation in April 1996 to become a member of the 'Dance for Joy' liturgical dance group at St Augustine's Church. The formation of the liturgical dance group was initiated by one of the ladies in the Parish who had a passion for dance and had observed liturgical dancing in another church. I am not gifted to sing but I believe that I have rhythm in my body to offer as worship. None of us in the group had any formal dance training: we only had a passion and desire to express our love for God through dance. At the age of 35, with no training or experience in dances for an audience, I felt anxious about being able to dance 'correctly', but I was also excited about being able to use my whole body in worship.

In the Hebrew tradition, dance functioned as a medium of prayer and praise, as an expression of joy and reverence, and as a mediator between God and humanity. (Taylor, MF 1976: 81). This tradition from the Israelites is found in the Bible especially in the case of David who danced before the Ark of the Lord (2 Samuel 6:14) and in the case of Miriam and all the women who danced after the Israelites crossed the Red Sea (Exodus 15:20) (RSV 1975). Liturgical dance was forced out of the church during the Reformation (Coleman 1995). I am delighted that with the liturgical renewal of the twentieth century, dance has begun to be accepted in the worship life of the church and been researched by dancers through Queensland University of Technology (Coleman 1995).

The 'Dance for Joy' group decided on the name as we believed that our aim was to bring joy to people's lives through dance ministry. The group size varied from four to eight persons. Our ages varied as well from teenagers through to those of us above 30 years old. We gathered weekly for about two hours each time to learn the dances and to gain a Christian spiritual understanding of dance. We danced to Christian music. We spent many hours listening to the music. Listening to the words and feeling the rhythm of the music. Once we had decided on the moves, we repeated them many times to commit the dance moves to memory through physical practice. We rehearsed the dances to ensure that we worked together as a team and that we were able to move our bodies in response to the music. We danced at major

festivals and seasons in the church. Many of our dances were video-recorded so that we could reflect on them for improvement.

As I watch the videorecording of one of our liturgical dances to the song, *Father of Life* that we performed in the church for a Women's Day service in December 2009 I observe that I am truly enjoying myself during the dance. I remember that I felt so close to God in the dance. I felt then and always that I am able to draw energy for the dance from the divine. I realise that I experience in the Law of Interaction,

‘The Acting One – acting on - The Acted upon’
as, ‘
The Energising one - moving - the dancing one’,
then
‘the *dancing one - energising – the receiving one*’
and recorded in the *algebrised form as* ‘
God moves the dancer’
and
‘Dancer energises the congregation’

so that during this action, the congregation in turn also experiences the spiritual energy from the dance. At the end of each dance, the congregation are always moved to applaud as they experience joy.

I shared the video of the dance with Joan, my supervisor and she observed “in your dance, I see the ex-pression of humility, celebration and appeal to God. I sense that you are communicating with the divine, God, through the dance”. In Figures 28 and 29 which are photographs taken from the dance video, I show how I am using my body in worship.¹⁵



Figure 28: Delysia raising hands in dance worship

¹⁵ The dance video can be accessed on Youtube at <http://www.youtube.com/watch?v=S7schvtPNOk&feature=youtu.be>



Figure 29: Delysia using her whole body in dance

When I reflect on my liturgical dance experience, I realise that I feel the connection with God during the movements. I enjoy the beauty of the dance. It makes me feel so humble when I am able to connect and communicate with the awesome power of God.

Charys, Heidi and Lola responded to my three questions as ‘Dance for Joy’ members via email and Facebook. Charys was one of the oldest members in the group at age 55. She loved dancing and did not let her age get her down. Heidi and Lola were both leaders of the group at different times. Their leadership style was very participative and open. They gave leadership from the perspective of organising the group together but not from a spiritual leadership perspective.

Charys said I influenced her by being “cheerful”, Heidi said I “shared joy”, and Lola said I was “encouraging and inspiring”. They all said that my commitment and faithfulness to the Dance group was also what influenced them. I never missed a Monday evening practice session unless I was out of town on business. I was always available to dance. Even if I was the Lay Minister on duty, I performed both ministries. I know that my inspiration and commitment was driven by my love of the Lord and the desire to worship Him in dance.

When I watch the video, our joy is evident as well as the awareness of our own spirituality. Through dance we have been able to use our bodies fully in the expression of our love for God. As I mentioned previously, none of us were trained dancers yet we learnt from each other. This learning was definitely triggered by the joy that we felt for what we were doing, thus making the learning of the dance easier and quicker to achieve. I believe that our myelin sheaths (Fields 2005; Fields 2008b) for the dance movements thickened as we practiced so that we were able to dance without hesitation and stumbling.

To be able to dance effectively, I am convinced that both my physical being and my mental being were definitely involved. I was very aware that I was having to count the steps and get the timing of the movements correct whilst still smiling and enjoying the dance. It is interesting that on those occasions which marked the heartrending chapters in the liturgical calendar, such as Passion Week, particularly Good Friday, and other days of repentance, I still found a deep joy and spiritual satisfaction in dancing the ex-pression of my love for God. The spiritual aspect of my being played a large role since it was that communicating with God which was what the dance achieved, and, I believe stirred up in those watching.

How did participating in floral arranging influence my *whole-being-learning* of Christian Spirituality? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?

Each week, I admired the beautiful floral arrangements in the church, and had a desire to be able to create such arrangements. In 1994, I attended a six week course on floral arranging that was offered at one of the local parishes. I discovered that flowers have a lot of symbolism and representation in Christianity just as in some of the other religions such as Buddhism, Hinduism and Chinese religions (Kandeler and Ullrich 2009)¹⁶. Whenever I see a passion flower growing on a vine, I am reminded of the passion of Jesus, his scourging, and crowning with thorns and crucifixion. Each part and colour of the flower is meaningful for me as they provide visual meaning of the Gospel story. I find myself admiring each flower as I place it into an arrangement guided by my inner instinct as to where the flower should go. Each one has a different colour, texture, size and form. I feel a connection with the flowers as I arrange them.

The six week floral arranging course which I attended was very practical with us doing a different arrangement each week and learning about the types of flowers, the preparation needed for a successful arrangement and the various design elements. Attending the course made me excited about floral arranging and I used every opportunity to put into practise what I had learnt. I am able to relate to created nature through flowers and am able to see the “thou-ness” of God’s creation around which

¹⁶ http://campus.udayton.edu/mary/resources/m_garden/research.html

Buber (1958:6) presents as one of the three spheres of life in which the world of relation arises (Ackermann 1991).

In 1996, I joined the flower panel at St Augustine's Church. There were four of us in the group who arranged flowers regularly for the Sunday services. The group was mixed in terms of gender and age. I was the youngest in the group with the oldest being approximately 60 years old. Most of the group had been arranging flowers for years with no formal training: they simply had a passion for working with flowers.

When I joined the group, I offered six basic lessons on flower arranging to the group to affirm their knowledge on flowers and floral arranging which already existed and to share the knowledge with those who were unsure. I covered the following aspects with respect to floral arranging - the mechanics, the importance of colour, care and use of flowers and the various basic shapes and designs that are commonly used. I encouraged the participants to be very interactive and hands-on, which came easily to them as they followed their passion.

Each person created their own floral arrangement every week as part of the session. I created a safe space for each person to commit themselves physically, mentally, emotionally and spiritually to floral arranging. Once the basics of flower arranging had been covered, I encouraged people to be creative and innovative in their floral arrangements especially during festivals like Easter, Christmas and Pentecost. During these festivals, we all worked together to interpret various Biblical themes that were appropriate for the season using flowers, cloths or any other materials. We each shared our ideas and created a final design for the arrangement from the various contributions. We took photographs of our arrangements so that we could have a record of the various designs that we had created.

The figures 30 to 32 below show how we worked together as a team to get the arrangements together for one of the Easter Sunday services. We had worked for a few weeks before the day to plan the design, get the frame made and purchase all the flowers and other materials needed.

This was a very big arrangement that depicted the purity of The Risen Christ in the centre using white flowers, and the different colours and shapes all around

represented the many nations that worship The Risen Lord. The arrangement was very big and different from the normal types of arrangements that were made for the church. I recall how we had to work together with 'all hands on deck'- see fig 30- to get the oasis well secured onto the metal frame. The metal frame had been designed by us and made up by one of the gentlemen in the church. The frame had to be covered in plastic. We used plastic bags which had to be secured with plastic ties in a manner that was tight enough, yet not so tight that they tore through the plastic. The teamwork and collaboration that was required is evident from the pictures.

Figure 30 shows the physical strength and dexterity that was required to bind the oasis - polystyrene foam that is wet and used to hold the flowers in place - onto the steel frame. Looking at figure 31, I recall how we worked step-by-step and kept stopping to reflect whether it was going according to plan or whether we had to change something as the arrangement and the flowers we had on the table 'interacted' with us. I found the flowers 'interacting with me' because as I looked at all the flowers, suddenly one would 'jump out at me', and I would know that it was the correct size bloom to fit in the gap on the oasis. We needed to ensure that the number of flowers were correct and would fit into the desired space with the desired effect.

This arrangement took us more than two hours to complete with many tense moments in between as to whether we had sufficient flowers and whether they would actually not fall off the oasis.

Oh, what joy we felt when the plan came together in the end (Figure 32). We felt joy from the sense of achievement, and also joy as a sense of relief. All our "molecules of emotion" (Pert 1999) that are hard-wired for pleasure were interacting and vibrating synchronously. We were able to express our immediate knowledge of the Easter Story that was deep within our hearts, soul and mind, within our whole beings. We were able to express through speech what our desire and thoughts were about the Easter story. We were able to express through the mediation of the flowers, the Easter story from the Bible. With each other in a group, we had made a connection with God, using the flowers to bring it all together. The ex-pression of our spirituality had been achieved by realising our connections and relationships with each other, and the connection between God and His creation.

As a whole-being person, I, and each one of us arranging the flowers, was able to “embed the countless actions and interactions of the universe in my [our] entire acting, sensing and knowing being” (Jousse 2000:73). In terms of the Law of Interaction,

‘The Acting One- acting on- The Acted Upon’,
the Propositional Geste in floral arranging is:
The Showing one - attracting – the arranging one’,
and then
‘the arranging one – placing – the showing one’
and then
‘the containing one – holding – the showing one’,
and then
‘the showing one – speaking – the observing ones’
which can be ex-pressed in an algebrised modern style as
‘The flower attracts the florist’, ‘The florist places the flower’
and
‘The frame (vase) holds the flower’, ‘The flower speaks to the congregation’

At times we would start out following our original plan for the design of the arrangement but as we continued, the plan would change spontaneously. This change is influenced by the balance and rhythm that would feel very different as we proceeded: the flowers would just not look right in a certain place: the shape or colour or size of the flower would determine that it be moved to a different place in the whole arrangement. A completed floral arrangement is a Mimographic expression that we as floral arrangers compose.



Figure 30: Team approach to floral arranging



Figure 31 thinking and planning the floral arrangement



Figure 32 joy expressed by all on completion of the floral arrangement

This joy and feeling of confidence to express themselves and their spirituality more whilst arranging the flowers was evident in the written responses I received from the group members when I asked them about my educational and spiritual influence on them. Dawn and Charys who are in the photographs above together with Hylton responded to my questions. The main themes from their responses was that they all regarded the relationships between us as being mutually reciprocal and full of fun.

Dawn and Charys found “friendship” and sharing of ideas through “listening” and Hylton appreciated “taking constructive criticism”.

Our love for each other was also evident in the energy of our relationships when Dawn and Charys experienced “lots of joy and laughter” and Hylton felt “co-operation” when working with me on the flower panel team. Hylton felt that “church comes alive with the bright floral arrangements”, and Dawn experienced the “Holy Spirit [guiding] our hands” and Charys felt “closer to God”, all of which provided evidence of the emotion-filled experience of arranging flowers together for love and in praise of, God.

We frequently encouraged each other and critiqued floral arrangements in an open and honest manner, providing advice and comments to improve the arrangement. This was always done in a loving manner towards each other. In addition, the more frequently we arranged flowers, the more confident we became and were able to arrange flowers in shorter times, more spontaneously. I believe that this is evidence of the process of automaticity where the more the neural pathways were enhanced and the myelin sheaths around the neurons were thickened by the repetition the more proficient we became (Fields 2005; Fields 2008a; Stewart and Williamson 2008).

As I felt loved by God, I was able to love what we were doing and connect deeply with God and with nature through the flowers. My spirituality thus grew each time we arranged flowers and contemplated their beauty as I “find God in all things and all things in God” (Ignacimuthu 2010: 80). Ignacimuthu further reminds me that:

To see a flower as witness to the gentleness of God’s mind and to smell its fragrance as the sweetness of his (sic) touch...are attempts to sense God’s presence (Ignacimuthu 2010:84).

How did I use Bible Studies to influence the *whole-being-learning* of Christian Spirituality of others? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?

I was approached by Fr Terry of the parish to lead a bible-study group with the parishioners in 1997. I had been attending a bible-study prior to that and the then leader had moved out of the area and then left the church. Apart from deciding as a

group that we would meet on a Wednesday evening, there were no hard and fast rules and prescriptions about the format or content of the sessions. There was a great mix of people in the group. The group of about eight to ten persons met for two hour sessions in various homes on Wednesday evenings. The people's ages in the group ranged from about 23 years old to over 60. Each person brought his or her own wisdom and level of spirituality. I was guided by either the Rector, by group members or even by my theological studies as to the topics we discussed. The topics ranged from issues of personal spiritual development to the impact and significance of Christianity in our local community, as part of Creation as well as in the wider Diocese. They included Diocesan Lenten topics such as *Here am I Lord...Send me*, (West, G 2012) the *Hospitality of God* (Nicolson 2010) and from other sources – *Beyond Ourselves* (Morgan 2010); *Towards a Transformed Society* (Diakonia Council of Churches 2011).

I used a variety of approaches inclusive of a Contextual Bible Study (West, Gerald 1993), Quaker Approach, *Havrutah* and *Lectio Divina* as ways of reading the Bible (TEEC 2005b). The sessions included sharing knowledge of various aspects of the Bible, theology, church doctrine and personal life experiences. I encouraged group members to co-facilitate or facilitate sessions of the Bible-study. Each person was allowed to be creative in their facilitation of the session. To prepare for the sessions that I facilitated, I prayed and read through any material that I had been given or that I found in relevant books or on reliable internet sites.

As the people gathered together at the beginning of the evening, I tried to get a sense of 'where they were' and how their day had been. I listened to their conversations amongst each other – 'Were they happy to be there?' 'Had they dragged themselves out?' 'Were they excited about the course we were doing?' 'Did they have family support to attend?' I watched their body language very closely as to their actual movement. 'Did they walk slowly and lethargically?' 'Were they feeling vibrant and full of energy?' 'Were they looking irritable and frustrated?'

I always started with a quiet meditation, just a short prayer or some music to focus them in the present moment. At times, I used relevant music for the session that was based on the bible reading or I introduced some meditative and contemplative sessions. I encouraged people to ask questions and to provide answers to questions

during the sessions. Each person in the group was given an opportunity to have their voice heard during the sessions. Whether it was a voice of consent/dissent or a voice of disagreement/agreement, all views were entertained in the safe space I created for the group.

We shared moments of sadness and moments of joy in the safe space. We developed relationships of trust amongst each other providing a listening ear and a soft heart of compassion to feel each other's pains and joys in life. We were able to share at a very deep spiritual level.

I observed how as each evening progressed, people were able to engage and become vibrant during the discussions. We were able to bring forth that knowledge and life experience within us and to blossom in our confidence and knowledge. I saw how each week people would grow in their level of spirituality. Each session ended with a sharing of cake and tea during which time discussions were continued. This fellowship, love and care became a hallmark of our sessions.

We started and ended each year with a family meal gathering. Group members invited their family members to these meals so that we interacted across ages and with people who were not able to attend the regular sessions. There were lots of hugs shared as we greeted each other.

During the Bible study sessions, I was able to affirm the knowledge I have of the scriptures and the skills such as the ability to make knowledge easily accessible, including people and making their voices heard in the sessions – Charys said “...you made me feel valuable...wasn't afraid to voice my opinion”. Rita said, in a very caring tone, that I gave her space “to voice her opinion” (SOP 3, Rita, March 2011,3:17 mins).

I also enjoyed helping people to grow in their understanding of the Bible and God, and their own self-esteem. I remember how Faith battled to read her bible regularly “I am not religious about reading my bible” (SOP 4, Faith, March 2011,4:29mins) and hence she found I encouraged her to connect with God through her reading of the 'Faith for Daily Living' texts, and through her increased prayerlife. Others felt that I had increased their knowledge of the scriptures and used terms: Charys said I had “increased [her] depth of knowledge and faith”. Des said that I had helped him to

“learn with a deep and meaningful understanding”. Fiona said that I had helped her to “explain spiritual issues in a down to earth and easy to understand way”.

I believe that I influenced not only their spiritual life but also their educational life by my method of teaching which was to ask questions and challenge peoples thinking and understandings of the bible and Christianity. Charys believed that she “learnt what good teaching is all about” from me during the Bible studies. I believe that I was able to relate to ‘where they were at’ in their Spiritual journeys, and to treat them with respect through listening to them and allowing them to participate fully in the sessions.

The people who attended the Bible Study evenings felt that they influenced my learning by them being present as their natural selves in the space together with me. Thus our presence was mutually influential. I was provided with opportunities to grow in my own spirituality and in my teaching from interacting with them. I definitely had to learn to listen very carefully and well when each person spoke so that I was able to draw on my intuition and knowledge that I had within me to attempt to address their needs. Each one of the people in the Bible Study helped to strengthen within me my deep connection with God and the awareness of his guiding Holy Spirit present in the sessions. I was able to grow in wisdom. The energy that they brought to the group was collectively, positively enhanced through the group interactions.

I believe that I provided opportunities for people to connect with each other as well as with their spirituality during the Bible study sessions. We taught each other and grew in wisdom and understanding just as Jesus set an example for us to follow (Mark 1:22; Matthew 4:23; Luke 3:52)

How did I use Quiet Days to influence the *whole-being-learning* of Christian Spirituality of others? What evidence can I present of this influence? What evidence can I present of my influence on the Christian spirituality of others?

I facilitated two Quiet Days - or to be more specific - Quiet Mornings - one on 1 April 2010 and the other on 25 February 2012, for women from local Anglican Parishes

who found it difficult to get away from their busy lives for long periods of time with their multiple roles as daughters, sisters, mothers, career-women and homemakers.

A Quiet Day/Morning is a mini-retreat that is purposely a time of sharing of faith and learning (TEEC 2004c). In the design of the Quiet Morning, I was influenced by Christian Feminist Spirituality, Ignatian spirituality (Rakoczy 2000; TEEC 2004a; TEEC 2004b; TEEC 2005a) and by the subject *Teaching the Faith* (TEEC 2005c). My Quiet Mornings were planned to have evidence of Rakoczy quoting Schneider's five distinct characteristics of feminist spirituality:

it is rooted in women's *experience* of empowerment (...) focuses on *bodiliness* (...) encompasses *care and concern for all that has been created* (...) *embraces forms of ritual and prayer* that are inclusive, participative, incarnate and life enhancing (...) committed to the *intrinsic relationship between personal and social transformation* (Rakoczy 2000:71).

I was very interested to use music, colour, or artefacts from nature as part of the Quiet Day/Morning. I had experienced how music, colour and movement helped me, during liturgical dancing, to have a "felt and a lived experience of God" (Lescher and Liebert 2006:20). When preparing the venue for the Quiet Morning, I set up a focal point in the hall using cloths draped over a cross and candles, flowers, shells and seed pods on a table. I arranged the chairs in a semi-circle around the focal point See figures 33 – 36 to view the layout and setup of the venue. I played soothing and calming music from a CD as "a bridge after prayer" (TEEC 2004c:65). The content of the Quiet Day/Morning was influenced by spiritual exercises from Ignatian spirituality. I focussed on reflecting on the actions and presence of women in the different stages of the life of Jesus from His birth through to His resurrection. The individual meditations and the stages were closely connected and coherent, which I hoped and intended would lead to a deeper relationship with Jesus. (See the detail in the attached programme in Appendix G.)



Figure 33: women draping the cross



Figure 34: women seated around the cross in meditation



Figure 35 I am seated on left under the painting



Figure 36: women in quiet reflection

From the pictures taken at the Quiet Morning held in April 2010, you can see how the women had the opportunity to participate fully in the session by draping the cross with the cloths. The circular seating arrangement allowed for the women to be able to see each other and feel a sense of unity as they interacted. The influence of Quiet Mornings on the women's spirituality was to draw them closer to God.

I was aware that the women were ordinarily unable to focus on God because their busy daily lives. Most of them were working as well as running their homes and caring for families. Through connecting and sharing with other women, they all benefited in some way or another. Judy said that the Quiet Morning was instrumental in her "focussing on God", and Joy said that it helped her to "meditate". Some said the Quiet Morning helped enable a connection with their inner being. Alice said that she experienced the Quiet Morning "whole heartedly", and Cheryl said that she was able to "listen with ...heart and soul". Lorraine said that she could "share what is in your heart", and Judy said that she was able to "share [what] God ...laid on my heart", and Des experienced a "sense of warmth".

Their learning was emotion-filled. Linda used the words "spiritually uplifting". Joan (not my supervisor) said it was "spirit filled". Marge experienced "calmness, peace, love and humility".

They were able to share love through kindness, patience, forgiveness, courtesy, humility and generosity.

Conclusion

In this chapter I have provided an account of my spiritual *whole-being-learning* and the spiritual *whole-being-learning* of my parishioners. Our *whole-being-learning* is evident in the written and audio responses of the participants as well as the videos and photographs. I have provided evidence of strong loving, joy-filled relationships we have developed with God and amongst each other. I believe that as I experienced God's love, I was able to love others and as I loved them, they were able to love others through Jousse's Law of interaction (Jousse 2000; Jousse 2004; Jousse 2006).

We all grew spiritually in the safe spaces created for the liturgical dance, floral arranging, Bible Study and Quiet Days. The energy that we brought to the group was collectively, positively enhanced through the group interactions. I believe that I influenced not only their spiritual life but also their educational life by my method of teaching which was to ask questions and challenge people's thinking and understandings of the Bible and Christianity.

We recognised each other's gifts and talents as we learnt from each other and grew in wisdom and understanding just as Jesus set an example for us to follow.

Chapter 6

How does learning happen?: My Educational learning story

Vocation (...)
the place where your deep gladness meets the world's deep need
(...) it begins in the nature of the human self,
in what brings the self joy,
the deep knowing
that we are here on earth
to be the gifts that God created.
Frederick Beuchener

Introduction

In this chapter I provide an account of my evidence of the biochemical nature of learning from the perspective of educational learning and through an educational lens. From my lived experience as an Academic Developer at the Durban University of Technology, I share my three concerns related to students not engaging actively in *whole-being-learning* which contributes to their low throughput. I share how it matters to me that teachers are passionate about teaching.

I provide a Venn diagram of *whole-being-learning* as manifested in a safe community of practice with nurtured relationships, recognised talents and gifts and integrated knowledge. I examine the extent to which I am living out my values through using multimedia representations and analysis of human expressions.

What is my concern? Why am I concerned?

In 2001, the Ministry of Education (Education 2001) issued a five year National Plan for Higher Education that had graduate throughput as one of its priorities. More than a decade later, graduate throughput has still not improved. A recent study at the DUT revealed an overall throughput of 23.60% (Pillay 2010). In Pillay's study, throughput is calculated by tracking a cohort of students registering for the first time in a given year, and completes the qualification in regulation time. In DUT's case, this is mostly three years. Throughput is a priority since an increased graduate output would ensure that the needs for high managerial and professional skills would

be met nationally. I see this need for increased throughput also from the point of view of the students who need to complete in minimum time so as to contribute to the socio-economic development of the disadvantaged communities in which they live.

I identify with our undergraduate students, at least 75% of whom are 'first generation' university students from previously disadvantaged communities (SASSE 2010). First generation students are students whose grandparents, parents or siblings have not attended university. Our communities are disadvantaged from a socio-economic perspective as well as from a formal education perspective. I believe that students from these disadvantaged backgrounds can achieve success in their studies notwithstanding the current trends and reports that indicate the contrary (Scott 2007; ASSAf 2010). Students living in the disadvantaged communities have a strong sense of community. My experience has shown me that the relationships in the disadvantaged community are different to those found in the university, and I agree with Parker Palmer when he asserts that

There is a simple reason why some students resist thinking: they live in a world where relationships are often quite fragile. They are desperate for more community, not less, so when thinking is presented to them as a way of disconnecting themselves from each other and from the world, they want nothing of it. If [teachers] could represent knowing [and learning] for what it is – a way of creating community, not destroying it – we would draw more young people into the great adventure of learning (Palmer 1993: xvi).

With the massification of Higher Education where the students are mostly identified as a number by the teachers particularly in the large classes, the relationships in the classroom are often fragile or even non-existent. Furthermore, the students cannot relate easily to the content of their courses, especially as they are offered in either their second or third language (SASSE 2010). I believe the relationships of the students with each other, with their teachers and with the content influence their learning. The relationships need to be built on love and care for each other, with teachers and the content, in vital, dynamic community with each other. I would like to promote loving and caring relationships, which will assist the learner to "*feel good*" (Pert 2006:11) during their learning.

In dealing with low throughput, many “educators of all sorts are in real pain these days, and that pain has compelled them to explore unconventional resources” (Palmer 1993:ix). I believe as an educator I am exploring “unconventional resources” (ibid) in order to find relief for my ‘real pain’.

I have a ‘real pain’ –

Because of the difficulty

of actively engaging learners in the classroom,

I have a ‘real pain’ –

Of being unable to connect

with colleagues, with learners, with their own heart,

I have a ‘real pain’ –

When I experience that deep intense

suffering of disconnection,

I have a ‘real pain’ –

When there is more combat

than community,

I have a ‘real pain’ –

When I feel an alienated spirit, mind, and body,

I have a ‘real pain’ –

When I am depleted

with little left to sustain me

or others.

Delysia Timm, 2012

In this pain and brokenness of my life, I find spirituality as an “unconventional resource” that offers hope to get reconnected and provide me with wisdom to

recall [me] to that wholeness in the midst of [my] torn world, to reweave [me] into the [teaching and learning] community that is so threadbare today (Palmer 1993:x).

I am not the only person with this pain. My colleagues and students within this teaching and learning community are also experiencing this pain, constituting a “torn world” and “threadbare community” (ibid).

I am concerned that many of our students and staff are suffering from a condition called "*Ethnostress*". *Ethnostress* is the term that Hill and Antone coined for the "confusion and disruption that people experience inside their [dysfunctional social] world" (Antone and Hill 1992:1). Diane Hill and Bob Antone in their study of dysfunctional social behaviour amongst Native Americans discovered that

Over the generations of contact, many native communities have been bombarded with negative messages about "who they are" as a people, and the end result has been the creation of a stress; and *Ethnostress* which centers around a poor self-image and a loss of purpose and sense of place in the world. Because we have been influenced by the negative messages, we have lost self-confidence and self-esteem (Antone and Hill 1992:4).

I am concerned that the negative messages the staff and students have received come from the (di)stresses they experience in their societies and communities in which they live. I believe that we are experiencing a legacy of apartheid in South Africa that has negatively influenced the education and living conditions of both the teachers and students. The majority of our students and staff come from groups previously classified by race groups as Black/African, Indian and Coloured. These race groups suffered then, and still do, from a lack of economic empowerment, poorly resourced and underfunded education systems and living conditions with high incidences of crime and violence. In addition to all this, our students and staff at DUT are faced with serious loss of lives of family members, fellow students and colleagues due to HIV and AIDS. They live in highly emotionally charged and unsafe environments. The physical violence in the communities stems from anger and fear. There is an overwhelming experience of physical and emotional, mental and spiritual abuse. Their 'whole beings' are no longer 'whole' due to the (di)stresses they experience. The (di)stresses are felt deep down in all their fibres and in the very viscera of their beings. They no longer have a "strong sense of self":

A strong sense of self is shaped in the early years of our life when we can be loved as a "precious child" who has purpose, who is acceptable, who belongs and has a place, whose very existence is beneficial and who has a sense of safety and security in the world because he or she also lives in a world that has sufficient food, water and shelter. These are the basic needs which are required by all human beings and which act as the foundation for a strong sense of self (Antone and Hill 1992:2).

For many students and staff, the societies, communities and families are dysfunctional and "threadbare" (Palmer 1993:x). The classroom has to a certain extent

become dysfunctional and “threadbare” (Palmer 1993:x). Both the students and the staff have so much happening in their viscera as their “molecules of emotion” (Pert 1999) are set in motion within their whole beings through the emotional (di)stresses they are experiencing. Both the students and the teachers are seeking for increased self-confidence and self-esteem. The continued loss of belief in themselves and mental and emotional pain leads to a lack of joy, a lack of love and a lack of learning in the classroom.

Both the students and the teachers are experiencing a sense of powerlessness and hopelessness (Antone and Hill 1992). In the state of despair and no learning in the classroom, there is a sense of brokenness. There is a deep-seated paralysis and inability to succeed in teaching and learning as whole beings. They are no longer able to “balance his/her mental, emotional, physical and spiritual human capabilities both internally within one’s self and externally in societal interaction” (Hill 1999:19).

Within the community of practice in the classroom, there is insufficient interaction, meaningful questioning leading to an integration of knowledge within and between the students and the teachers (Xenophon 1897; Dewey 1938; Jousse 2000; Wenger *et al.* 2002; Jousse 2004). There is insufficient recognition of the gifts and talents within the teachers and the students (Huxtable 2008; Robinson and Aronica 2009; Whitehead 2009a). There is insufficient nurturing and serving amongst the students and the teachers (Greenleaf, R 1977; Palmer 1993; Palmer 2007).

In many of the classrooms I have experienced as a learner, and observed as an Academic Development practitioner, there is largely a destruction of community with authoritarian lecturing, largely unengaged listening and mechanical memorisation. There has been predominantly competition and not collaboration between learners and limited place for original inquiry. The space for learning tends not to be nurturing, lacks recognition of talents and gifts and there is minimal integration of knowledge. The students are barely engaging actively in the class. There is limited *whole-being-learning*.

I have identified three contributing concerns of low throughput. I am concerned that students do not believe in themselves, and the emotional issues that they experience are getting in the way of their learning. I am concerned that students are not really actively engaging with the teachers and with the subject matter hence learning is not

happening in the classrooms as it should. These two concerns are both linked to my third concern that teachers are in a state of despair in their classes and need support and encouragement. All three concerns point to a lack of *whole-being-learning*.

Before presenting the evidence for my concerns of low throughput, I will present an account of what matters to me, my passions, values and beliefs and what kind of difference I want to make in the world.

What really matters to me? What do I care passionately about? What are my values and beliefs? What kind of difference do I want to make in the world?

It matters to me that teachers are passionate about teaching and learning and agree with Jousse that,

There should be no superficial teaching. When one has given one's breath, one has to give one's entire being. To give oneself in teaching is to give life, or expressed better still, to give one's own life (...) One does not only give one's life for someone by dying for him. One also truly gives one's life to someone by living for him and in him. The true life-giver continues, then, to live on in himself, but no longer for himself. Indeed, from some point, he begins to live with such a power and such a superabundance that he lives on also in the one who has been given life. The true life-giver has to give himself without abandoning himself. For the life-giver-teacher, giving his life to someone will, then, be to give him all his living gestures, all his global, vital mimodrama (Jousse 2000: 411).

Within my entire or rather whole-being I have the "power" and "superabundance" of feeling, intuition and physical and sensory awareness. As a "life-giver teacher", I do need, however, to guard against losing my own life and becoming despondent. As an Academic Developer, I am called upon to be a "life-giver" to the teachers that attend professional development workshops. I am a "life-giver" as I guide teachers to maximise their passion and potential to enhance learning. Similarly, teachers need to maximise the passion and potential of the students to engage in whole-being learning. I believe that for whole-being learning or enhanced learning to occur, from my own experience and the experience of others, I need to actively engage within a safe space (Bruner 1977; Greene 1978; Kolb 1984; Holdstock 1987; Angelo 1993;

Hendry and King 1994; Allen 1995; D'Arcangelo 1998; Jensen 1998; Omrod 1999; Bransford *et al.* 2000; Jensen 2000).

I am passionate about developing a 'safe space' for the active engagement between the whole being learner, whole being teachers and the content for *whole-being-learning* to occur within a community of practice (Wenger *et al.* 2002). The community of practice can be developed through the creation of a safe space. I believe *whole-being-learning* happens within the safe space when there is integration of knowledge (Xenophon 1897; Dewey 1938; Boyer 1990; Jousse 2000; Jousse 2004), recognition of talents and gifts (Huxtable 2008; Robinson and Aronica 2009; Whitehead 2009a) and nurturing relationships (Greenleaf, R 1977; Palmer 1993; Palmer 2007) between the whole being learners and the whole being teachers. For this thesis I have identified these components of *whole-being-learning* and represented them diagrammatically in Fig 37.- *Whole-Being-Learning* The Venn diagram is a Mimograph (Jousse 2000) showing the relationships between the components of *whole-being-learning* which are constantly dynamically changing. I believe that anyone engaging in *whole-being-learning* can activate the engagement of *whole-being-learning* through interactions involving any of the three components. Since each of the components of *whole-being-learning* are in a dynamic, holistic relationship, they must not and cannot be regarded in isolation.

From Fig 37 – *Whole Being Learning*, happens when all three of the components within the Community of Practice interact according to the Law of Universal Interaction (Jousse 2000:111). The interactions that are continuously imbricated in the community of practice are triphasic, following :

“an Acting One – acting on – an Acted upon”

in the form of

‘questioning one – integrating – known one’,

‘knowing one – recognising – gifted one’

‘caring one – nurturing – hurt one’

ex-pressed in the algebrised form, as

‘the teacher integrates the learner’
‘the teacher acknowledges the learner’
‘the teacher nurtures the learner’

Each interaction is triphasic and consists of

1) the Essential Action of the subject;[acting one] 2) the Transitory Action of the subject [acting upon]; and 3) the object on which this Transitory Action focuses, the object which is itself mimed as an Essential Action (Jousse 2000:70).

The Essential Action is the characteristic attitude or geste that is re-played by the being “as a *substitute* for the essence of the being, that essence which all human intelligence seeks spontaneously even before it starts analysing its own manner of being” (Jousse 2000:69). Jousse reminds us that

these ‘expression-of-attitude-beings’, if we may call them such, do not confine themselves to ‘keep’ to this or that characteristic position; these ‘expression-of-attitude-beings’ do not have only one essential geste, an action which could be called ‘potential’. They also act on each other, in perpetual interaction, through multiple ‘Transitory Actions’ which are ceaselessly diversified. Each Action activates other Actions, specifically according to its own ‘potentiality’ (Jousse 2000:70).

I believe that the whole being teacher and whole being learner have three Essential Actions and Transitory Actions within their “potentiality” which when realised activates whole being learning. The whole being teacher and the whole being learner are “in perpetual interaction” (ibid) within the community of practice developed from the safe space. The teaching and learning process for *whole-being-learning* is characterised by the teacher questioning, knowing and caring for the learner who is then integrated as ‘the known one’, recognised as ‘the gifted one’ and nurtured as ‘the hurt one’. I believe that the Higher Education Educator and the student can be both the teacher and the learner within the classroom as they interact and thus engage in *whole-being-learning*.

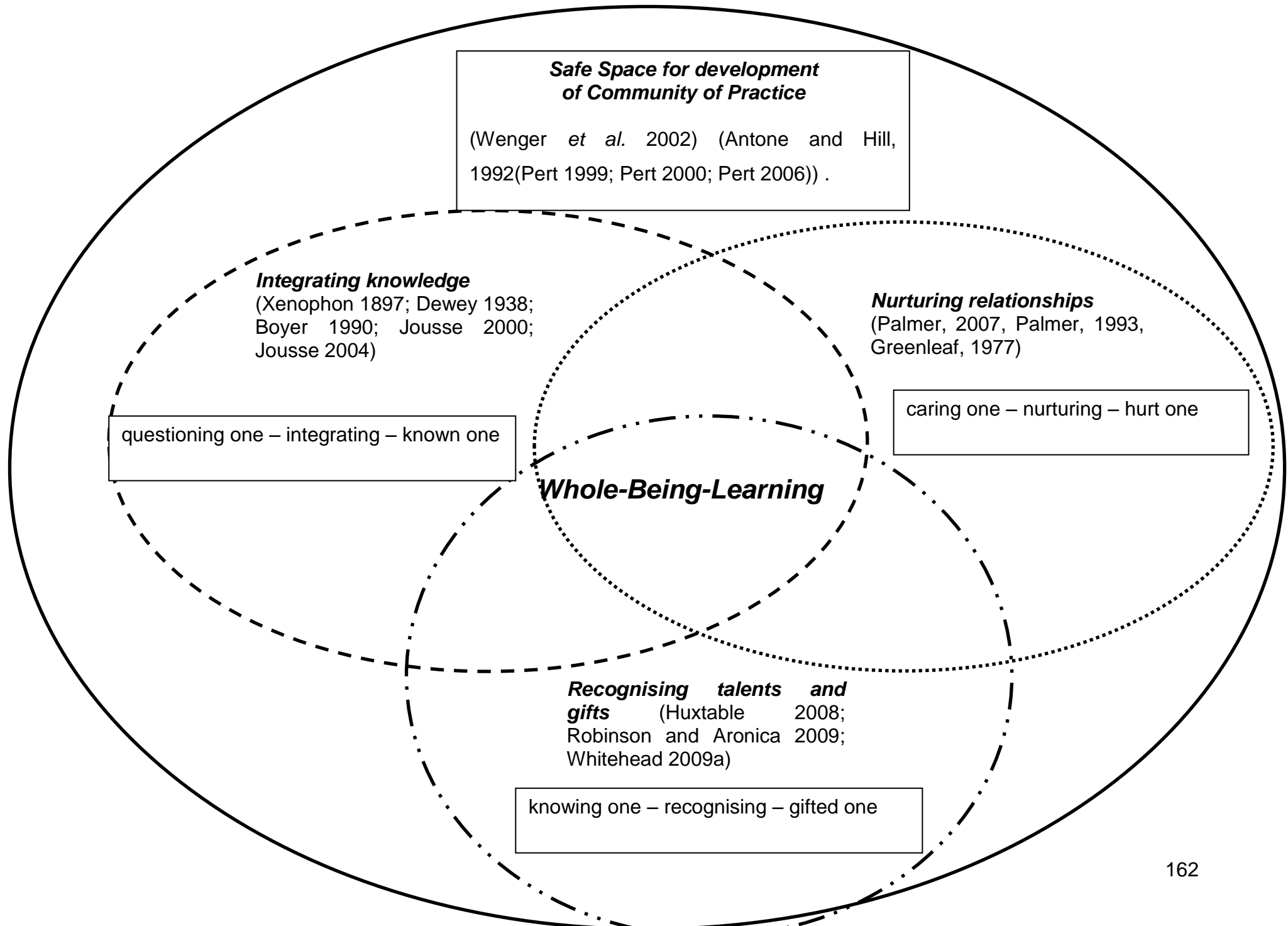


Figure 37 :Venn diagram of whole-being-learning, Timm 2012

I believe that *whole-being-learning* occurs when both whole being learners and whole being teachers are actively engaged. *Whole-being-learning/teaching* is when the whole being learner/teacher engages with their mind, heart, body and spirit, as one “indivisible psycho-physiological complexus of geste” (Jousse 2004:154) using all modes of human expression. Jousse reminds me that

[I] think with, and feel with, [my] whole indivisible psycho-physiological complexus of geste, which resonates indivisibly with the universe, whether [I] am aware of it or not (Jousse 2004:154) .

I value loving other people and being in their presence, feeling their dynamic energy as they interact. I value not only being in their presence but also challenging them to develop and grow in all their dimensions of their being – spiritually, physically, emotionally and mentally. I value supporting and encouraging people as they experience difficulties and challenges in their life. I value being impartial and not being judgemental of people and their ideas as they interact with others and as they seek meaning for their own lives. In my own life and work I value loving what I do, having a passion for what I do and having fun and pleasure in all I do. Having fun and pleasure in what I do makes me feel good. I experience a joy-filled love and a love-filled joy. Before providing evidence of the extent to which I am living out my values and creating a safe space for learning, I will explore what the safe space for the development of a community of practice looks like and all its various components.

How have I created a Safe Space for the development of a Community of Practice?

As a Higher Education Educator and Academic Developer, I want to make a difference by

[creating] a space in which the community of truth is practiced... community of truth...- a rich and complex network of relationships in which we speak and listen, make claims on others and make ourselves accountable (Palmer 1993:xii).

I believe that the space I create needs to be a ‘safe space’ where we “speak and listen, make claims on others and make ourselves accountable” (ibid). We need to

engage in the space showing respect, openness and trust within the community. The majority of our students and educators are from Zulu cultural backgrounds and from them, I have learnt that the sense of respected, safe space in a community is about *ubuntu* and *ukuhlonipha* : a respectful regard for everyone and everything in all creation.

I believe that it is not just about the brain-to-brain link but actually the whole being-to-whole being link that shapes our relationships. Our “molecules of emotion” (Pert 1999) are communicating throughout our whole being and not just in our brains. As teachers and learners interact, Goleman (2007) reminds us that our feelings and emotions we experience during these interactions are biochemical as they mould our biology.

Through the safe space, a community of practice will be developed. Wenger, McDermott and Snyder (2002:4) describe a community of practice as “groups of people who share a concern about a topic, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis”. The community of practice will consist of educators with a passion for teaching and a desire to engage in *whole-being-learning* strategies in their classes.

In the community of practice, the teachers and learners

don't necessarily work together every day, but they meet because they find value in their interactions. As they spend time together, they typically share information, insight and advice. They help each other solve problems. They discuss their situations, their aspirations and their needs. They ponder common issues explore ideas, and act as sounding boards. (...) However they accumulate knowledge, they become informally bound by the value that they find in learning together. This value is not merely instrumental for their work. It also accrues in the personal satisfaction of knowing colleagues who understand each other's perspectives and of belonging to an interesting group of people. Over time, they develop a unique perspective on their topic as well as a body of common knowledge, practices, and approaches. They also develop personal relationships and established ways of interacting. They may even develop a common sense of identity (Wenger *et al.* 2002:8).

Within the 'safe space' community of practice, relationships develop which extend beyond the meetings, and across disciplines, programmes and faculties within the institution. These relationships are motivated by a number of factors, but the most

common is the factor of “similar situations” (Wenger *et al.* 2002:9). The similarity of situation in the case of the ‘safe space’ community of practice is that all participants are asking “How can we activate *whole-being-learning*?”

Furthermore, Wenger *et al.* (2002:9) posit that

To develop such expertise, practitioners need opportunities to engage with others who face similar situations. (...) the knowledge of experts is an accumulation of experience – a kind of “residue” of their actions, thinking, and conversations – that remains a dynamic part of their ongoing experience. This type of knowledge is much more a living process than a static body of information. Communities of practice do not reduce knowledge to an object. They make it an integral part of their activities, and they serve as a living repository for that knowledge.

In the ‘safe space’ the teachers find great value in “sharing tacit knowledge [which] requires interaction and informal learning processes such as storytelling, conversation, coaching, and apprenticeship of the kind that communities of practice provide” (Wenger *et al.* 2002:4). Through this approach amongst the community, the ‘safe space’ is blessed with “richer learning, more interesting relationships, and increased creativity” (Wenger *et al.* 2002:35). The ‘safe space’ is respectful, where each person’s voice is heard. Wenger *et al.* (2002:37) remind me that

Learning requires an atmosphere of openness. Each community develops a unique atmosphere – intense or laid back, formal or informal, hierarchical or democratic. Whatever norms members establish, the key is to build a foundation for collective enquiry. An effective community of practice offers a place of exploration where it is safe to speak the truth and ask hard questions. Trust is key to this process.

Stephen MR Covey identifies *The Speed of Trust* as key to cost free success. The four cores of trust are integrity, intent, capabilities and results. “The first two deal with character and the second with competence” (2006:54). “You will recognise them as the same elements that would prove or destroy your credibility as an expert witness in a court of law” (*ibid.*).

The cores of trust embrace knowledge, practice and relationships: what Wenger *et al.* (2002:27) identify as the domain of knowledge, the community of people, and shared practice that define communities of practice. I believe the domain of knowledge in

the 'safe space' Community of Practice focuses on the improvement of our professional practice as educators.

Through my practice and reflections on my practice, I have come to realise that "through its practice (...) the community operates as a living curriculum" (Wenger *et al.* 2002:38). I believe that the living curriculum of communities of practice will energise the process of transformation of the higher education sector, so that the learners are able to engage in *whole-being-learning*. I am encouraged when Wenger *et al* (2002) remind me that ...

Communities of practice are a natural part of organisational life. They will develop on their own and many will flourish, whether or not the organisation recognises them. Their health depends on the voluntary engagement of their members and on the emergence of internal leadership. Moreover their ability to steward knowledge as a living process depends in some measure of informality and autonomy. Once designated as the keepers of the expertise, communities should not be second-guessed or overmanaged. These observations may lead some to argue that there is nothing one can do to cultivate communities of practice, or worse, that anything organisations do will merely get in the way. We disagree. In fact this book is born of our experience that organisations need to cultivate communities of practices actively and systematically, for their benefit as well as the benefit of the members and communities themselves (Wenger *et al* 2002 :12).

How does the nurturing of relationships influence *whole-being-learning*?

I believe that personal and professional relationships within the community of practice are to be based on nurturing collegial relationships not reporting relationships. In order to promote *whole-being-learning* in our teaching and learning practice, each of us has the same responsibility to ourselves, our learners and the institution: to improve what we do systematically and to respond to the question: "How do we get the right things done?" (Greenleaf, R 1977:60) and "How can I serve best?" (Greenleaf, R 1977:33). From my spirituality, I believe that I can serve best and achieve *whole-being-learning* as an educator when I am able to accept the whole learner for who s/he is and empathise with her/him through showing interest in their whole lives. As the community of practice is able to accept learners for who they are, and empathise with them, there is a growth of trust and *whole-being-learning* happens as all are able to "grow taller than they would otherwise be" (Greenleaf, R 1977:35). In so doing, the learners and educators become more

autonomous and more disposed to serve. I believe that as members of the community of practice we all serve first and lead each other to engage in *whole-being-learning*. The leadership of the 'safe space' Community of Practice is not limited to me as an Academic Developer but it is shared amongst the existing members of the 'safe space' or even at times from new members in keeping with the nature and purpose of a community of practice for the mutual benefit and growth of everyone.

Members of healthy communities of practice have a sense that making the community more valuable is to the benefit of everyone. They know that their own contribution will come back to them. This is not a direct exchange mechanism of a market type where commodities are traded. Rather it is a pool of goodwill – of “social capital”, to use the technical term – that allows people to contribute to the community while trusting that at some point, in some form, they too will benefit. This kind of reciprocity is neither selflessness nor simple tit for tat, but a deeper understanding of mutual value that extends over time (Wenger *et al.* 2002:37).

The mutual value that extends over time must be experienced in our whole beings. Parker Palmer believes that 'our seeing shapes our being' thus if we see with the eye of the mind we only see a world of fact and reason and if we see with the eye of the heart we see a world changed by the power of love within a community (Palmer 1993:xxiii). We live in a whole world and thus need “wholesight” – both mind and heart united as we cannot forsake or abandon either – we need a spirit-seeking heart and a knowledge-seeking mind.

My understandings of quantum physics (Zohar 1991; Zohar and Marshall 1994), women's ways of knowing (Wilson 2004a; Wilson 2004b; Barnacle 2009) and Native American ways of knowing (Antone and Hill 1992; Hill and George 1996) reinforce for me that my knowing draws on my senses, my reason, my intuition, my beliefs, my actions, my relationships and on my body itself. Both my heart's vision and my minds vision are brought together as ways of knowing. I identify with Palmer when he states that there are three sources of knowledge or motives for our knowing - curiosity , control and compassion or love (Palmer 1993).

Within the community of practice, I believe that we need to be mindful that curiosity and control as sources of knowledge can lead to a loss of respect for life especially when the curiosity is an “amoral passion” and control is a “tendency toward

corruption” (Palmer 1993:8). Thus for *whole-being-learning*, the third source of knowledge is key together with a balanced curiosity and control. The motive for my knowing is largely compassion which I draw from my spiritual heritage. I agree with Palmer when he says “the act of knowing *is* an act of love” (Palmer 1993:8)—(italics in original). Knowing as an act of love is essential for *whole-being-learning* with the purpose of reweaving the “threadbare” community (Palmer 1993:x) that is in pain and *ethnostressed* (Antone and Hill 1992). This reweaving happens in the community of practice and connects the learner (knower) and the subject (known), requiring of each to change, or to undergo transforming joy whilst calling the community to “involvement, mutuality and accountability” (Palmer 1993:9). Involvement, mutuality and accountability are all evident in *whole-being-learning* resulting in wholeness in the midst of a torn world. I believe that unless the teacher can be compassionate and loving which results in taking concrete action with the other, the potential for *whole-being-learning* is not fully realised and will be limited.

With my self-knowledge and acceptance, I am able to be authentic and spontaneous in my engagement of *whole-being-learning*. I engage in an education of truth and freedom to create the world and to be created by the world, not in closed, circular logic but rather in transcendence to see “beyond facts into truth, beyond self-interest into compassion (...) into a love required to renew the community of creation” (Palmer 1993:13). I am drawn to education as an “organic body of personal relations and responses, a living and evolving community of creativity and compassion” (Palmer 1993:14). I experience a personal responsiveness and accountability to my learners and them to me as well as to the world of which we each are a part as whole beings.

I am unable to make sense of the self in relation to the world from only an objective sense only since my personal experience and relationships in the world influences my findings and I agree with Polanyi who states “knowledge is neither subjective nor objective but a transcendence of both achieved by the person” (Polanyi 1958). To understand the ways of knowing in a classroom, I find it more informative to observe the learning and teaching practices. The teacher rather than the theory is the living link between the knower – learner- and the known –the subject. As a teacher I can help learners to develop a relationship with the subject that is guided by an inner sense of truth.

Parker Palmer (Palmer 1993) provides four epistemologies that are useful to nurture learners to a sense of inner truth.

First, believe that knowing requires a personal relationship between the knower and the known. Students learn by interacting with the world and not from viewing it from afar.

Second, believe that knowing is a process in which subjective and objective interact. Students' passions influence, and are influenced by, the facts of the subject. The students would not only know the world but their inner secrets would become known.

Third, I believe that knowledge arises from commitments of communities. Classrooms would be places where community is fostered not feared. Students are formed in a knowing that comes from communal commitments and they are thus able to use their knowledge to reweave a "threadbare" community (Palmer 1993:x).

Fourth, I believe that there is an organic relationship between the knower and the known. My classroom practice is to learn the intricate relationships of the world and not to rearrange the world. In learning the intricate relationships of the world, the knower is more aware of the interrelated quality of life and is able to work collaboratively.

How does recognition of talents and gifts influence *whole-being-learning*?

I believe a further contributing component to *whole-being-learning* is when the "knowing one recognises the gifted one". Marie Huxtable (2008; 2009) and Jack Whitehead (2009c) promote the recognition of the gifts and talents in learners as a way of valuing people as knowledge creators. I believe a learner experiences *whole-being-learning* when they

come to know the person they are and want to be; recognise and enhance the talents they have developed and those they need to develop for creating, offering and accepting gifts; and envisioning the gifts of knowledge of the world to which they might commit themselves to creating and offering during their lifetime (Huxtable 2009:216).

The teaching and learning practices that activate *whole-being-learning* and in which talents and gifts are recognised, is creative and as such is

distinguished by the relationships, spaces and opportunities that support and challenge the learner to explore new territory, (which may also be uncharted by their teacher or experts in the field), to exert themselves to think, to create meaning and to create knowledge and offer it as a gift to themselves and others (Huxtable 2009:219).

The 'safe space' through which the community of practice is developed allows for the creativity of the whole learner to be engaged. In this process, the whole being learner is provided an opportunity to get to know what they can do only when they actually do it – then they are being creative. I believe that there are not only a few gifted and talented people in the world to create valuable knowledge be it in any mimodrama or mimeograph, ex-pressed im-mediatey or in some mediated form. I support the view of Huxtable that

all persons are capable of developing and enhancing talents to create and offer, valued, and potentially valuable, knowledge as gifts to improve their own lives and that of others (Huxtable 2009:228).

As a teacher and Academic Developer in a community of practice developed through a 'safe space', in recognising the talents and gifts in the students or other educators, I am able to activate *whole-being-learning* especially for those who

feel that what they good at isn't valued by [higher education]. Too many think they not good at anything (Robinson and Aronica 2009:11-12).

according to Ken Robinson, an internationally acclaimed leader in creativity, innovation and human capacity. I am further encouraged to understand that I can find the

place where the things we love to do and the things we good at come together (...) *the Element* (Robinson and Aronica 2009:xiii).

Each of us has a different "*Element*" as it is characteristic of our aptitude and passion and needs a particular attitude and opportunities. Ken Robinson believes that an aptitude "is an intuitive feel or a grasp of what that thing is, how it works, and how to use it" (Robinson and Aronica 2009:22). I may have the aptitude for something however to enact it, I need to have passion or the love or deep delight and pleasure in doing that thing. I believe that in *whole-being-learning*, the 'intuitive

feel' together with the passion is recognised, honoured (Shekerjian 1990) and very often felt in my viscera as a form of subtle energy. This subtle energy is an aggregation of "microscopic gestes" that is embodied, molecular and manifests in the biology getting ready for "ex-pression" as "macroscopic geste" (Jousse 2000).

Robinson like Jousse believes that we need to understand that bio-psychologically and psycho-physiologically, our minds, bodies, feelings and relationships with others do not operate independently of each other (Jousse 2000; Jousse 2004; Robinson and Aronica 2009). Thus to activate *whole-being-learning*, we find our '*Element*', as we operate true to our organic nature as one holistic system within the community of practice.

How does the integrating of knowledge influence *whole-being-learning*?

Within the community of practice, the teacher as the questioning one is able to pose questions to the learner to integrate the knowledge of the learner as well as the knowledge of the subject. I yet again remind myself of what Jousse said:

To be fit to guide the development of the whole human being, without deforming or impoverishing [her], it is necessary that the teacher be experientially aware of all the learner's underlying anthropological 'potentialities', which seek to blossom forth. This is precisely the role of the educator: to make them blossom forth, to 'lead out from within' = *ex ducere* (Jousse 2004:19).

The teacher thus needs to establish a connection and relationship to be able to be aware of the "learner's underlying anthropological potentialities". The "anthropological potentialities" are deep within the viscera of each learner and need to emerge.

Through asking questions, the teacher and the learner are able to get closer to underlying beliefs and the extent of knowledge of the teacher/learner. Posing questions leads to critical thinking in *whole-being-learning*. Critical thinking is reflective, criteria driven, authentic and reasoned (Nosich 2005). Thus through critical thinking, integration of the parts occurs to make up the whole.

The Socratic Method is a dialectic form where answers to questions are a prelude to further questions. Socrates in conversation with Ischomachus had the following to say about the use of questions in teaching and learning:

Really, Ischomachus, I am disposed to ask: “Does teaching consist in putting questions?”⁴⁰¹ Indeed, the secret of your system has just this instant dawned upon me. I seem to see the principle in which you put your questions. You lead me through the field of my own knowledge,⁴⁰² and then by pointing out analogies⁴⁰³ to what I know, persuade me that I really know some things which hitherto, as I believed, I had no knowledge of (Xenophon 1897ch 19 : 401 - 403).

The Socratic Method has been used as a teaching strategy to engage the learners in *whole-being-learning* (Nosich 2005; Boghossian 2006; Gose 2009). It is a useful method to use in becoming aware of the potential of the learner or to “ex-ducere” – to “lead out from within”.

What role do the teacher/learners’ pasts play in dealing with issues of the present and the future in *whole-being-learning*? I believe Dewey presents some light on this when he says that we need to :

[discover] the connection which actually exists *within* experience between the achievements of the past and the issues of the present...(Dewey 1938:23)

Through discovering the connection ‘*within*’ experience, the whole being is able to integrate education and personal experience through an organic connection. I believe the personal experiences that activate *whole-being-learning* are those that “live fruitfully and creatively in subsequent experiences” (Dewey 1938:28). I see critical and creative thinkers as whole being learners who have capacity thus for lifelong learning as they continue to integrate their past experiences with issues of their present lives through interpretation, and finding patterns – asking “What do the findings mean?” (Boyer 1990:19).

Integration of knowledge in *whole-being-learning* happens when the whole being learner is able to “interpret, draw together, and bring new insight to bear” thus engaging in the scholarship of Integration as postulated by Boyer (1990:19).

Now that I have provided a description of the safe space for the development of a community of practice and its components that contribute to *whole-being-learning*, I

will share evidence of the extent to which I am living out my values and creating a safe space for *whole-being-learning*.

What is the extent of me living out my values and creating a safe space for *whole-being-learning*?

I live out my values of sharing a joy-filled love and love-filled joy through loving relationships which include interactions during which I challenge, support and encourage people to develop and grow as whole beings. I believe that as people develop and grow, they are engaging in *whole-being-learning*. I believe that this *whole-being-learning* is activated best within a safe space that I am able to create as an Academic Developer.

My professional development career as an Academic Developer began in 2000 when I was employed as the Effective Learning Centre (ELC) Co-ordinator at the ML Sultan Technikon (MLST)¹⁷. The ELC, setup as a USAID/TELP funded project, had a vision to be a “hub for building the capacity of all academic staff at the MLST in the design and production of new and effective learning materials” (Naidoo and Cooke 2000). As the co-ordinator of the centre, I contributed to the creation of a vibrant and safe community of practice that enabled staff to be creative and innovative in designing learning materials. My contribution was largely in facilitating workshops for the academic staff to design learning materials that promoted active learning.

Many of the academic staff did not have access to computers and were not familiar with using them in the design of learning materials. They were in a strange and unfamiliar place. Many of them had not even used a computer before. They were afraid of this machine the workings of which they did not and could not really understand. They were afraid of losing all their work by pressing the wrong button. I watched as many of them would actually break out in a sweat and their hands and sometimes, their whole bodies would shake and tremble as they sat in front of the computer. I wondered how were they going to learn when they were so anxious and filled with fear.

¹⁷ The ML Sultan Technikon merged with Technikon Natal in April 2002 and became known as the Durban Institute of Technology and later the Durban University of Technology.

I too entered the class with mixed emotions - fear of being inadequately prepared for the questions from the learners, fear of my own ignorance or limited ability to use computers and fear of being boring and meeting glazed eyes. At the same time, I was excited about us all coming together to promote active *whole-being-learning*. I was excited about the opportunity to be involved in something new through using computers and technology for learning.

We worked through our fears and apprehensions by listening carefully to each other and responding to each person's needs. I helped to create a safe community of practice amongst them as we entered into a relationship together. I helped to create a

living and evolving community of creativity and compassion...[we] were drawn into personal responsiveness and accountability to each other and the world of which we are a part (Palmer 1993:15).

I provided space and opportunity for the teachers to generate ideas, judging which felt right or worked best and refining the ideas as they tapped into their talents.

As I interacted with academic staff in workshops that I facilitated for the design and development of effective learning materials, I respond in a spontaneous manner to the presence of the staff in the workshop using my hands and my whole body. I do not consciously plan or set out to behave and respond in that manner, it happens spontaneously.

I have now realised that I was engaging in activation of *whole-being-learning*. The 2-hour workshops and full day annual seminar that I developed and facilitated for the academic staff of the institution only, whilst in the ELC were :

Using Information Technology to Promote Active Learning (March 2001 – September 2002)

Sharing Practice in designing innovative materials (Seminar, September 2002)

Curriculum Innovation: Promoting Information and Communication Technology to promote Active Learning (Seminar, September 2001)

Using Games to Promote Active Learning (2001,2002,2004)

Using Powerpoint to develop learning materials that promote active learning and self-directed learning (2001, 2002,2003)

Designing Innovative Learning Materials Using e-Mindmapping software (2002, 2003) (Cooke and Timm 2004).

Whilst working in the ELC, it was common practice to video-record the workshops and seminars. The videos were required as part of the evidence by the external funders that the workshops were actually held.

In order to examine the extent to which I am living out my values, I have used two approaches. The approaches of Jack Whitehead and Marie Huxtable (Huxtable 2008; Whitehead 2008b; Huxtable 2009; Whitehead 2009a; Whitehead 2009c; Whitehead 2010a) of using multimedia representations to clarify and share meanings of the flows of energy in embodied values and the analysis of the expressions following the fundamentals of human expression and communication of Marcel Jousse (2000; 2005).

Whitehead promotes the use of multi-media representations such as videos and photographs as he believes that they are able to adequately express the “embodied values we use to give meaning and purpose to our lives in education” (Whitehead 2009c:113). Both Whitehead and Jousse share the common understanding that the written style of representation used in the Universities “removes valid expressions of the life-affirming energy with values” (Whitehead 2009c:113) which Jousse calls “algebrosation...is a disease of expression, with words no longer referring to any concrete reality but only to other words” (Jousse 2005:199).

You may view the videos that I have selected either through Youtube – I supply the link for each video, or they can be accessed on the enclosed DVD's. You may view the videos and engage with the text in an interactive manner. I use Whitehead's method (Whitehead 2008b; Whitehead 2009a; Whitehead 2009c; Whitehead 2010a) of viewing the video in order to “see and experience” the relationally dynamic flows of energy and values, which you are invited to try as well. Using Quicktime to view the videoclip, move the cursor along at about 7 times the normal speed, a few times, back and forth, as you focus on the values being expressed. In the rhythm of moving backwards and forwards, the embodied expression of values of the person, between

persons and within a space will be appreciated. When you feel the 'moment of empathetic resonance' you can stop the cursor and test for yourself the validity of the video.

The first video clip you can view on Youtube or on the enclosed DVD-
<http://www.youtube.com/watch?v=1zku3e7qE8Q> (SOP 22, How do I facilitate workshops? March –Sept 2001) is compiled from a series of workshops that I facilitated on *Using Information and Communication Technology to Promoting Active Learning*. Figure 38 is a still picture of one of the sessions.

I shared this video with colleagues who had not attended the workshop to obtain their responses of my expressions and energy. They all shared similar responses. They said that they can feel the loving dynamic energy I have with the participants in my workshops as I spontaneously engage with them in the different parts of the room. The energy is expressed in the movements of my hands and my body. The passion, pleasure and love for what I do is truly expressed in my face. My eyes are shining as I interact with the teachers, as I speak and listen. As I reflect on the shine in my eyes, I am reminded of Ben Zander (2009), a famous orchestra leader who said:

My job was to awaken the possibility in other people. And I wanted to know whether I was doing that. You know how you find it? You look at their eyes. If their eyes are shining you know you are doing it. If they are not shining, you have to ask yourself a question: Who am I being that my players' eyes are not shining? (Benjamin Zander: Classical Music with shining eyes: Tedtalk: http://www.ted.com/talks/lang/eng/benjamin_zander_on_music_and_passion.html)

In the first 1.06 mins of the video, I can see that I am listening attentively to the teachers as I position my body and make eye contact with them. I am fully present in the work that I do, and my energy and values are demonstrated in the video.



Figure 38 Video Clip of staff Development workshops held from march 2001 until sept 2001
<http://www.youtube.com/watch?v=1zku3e7qE8Q>

I can see how I invite people into the space with my energy and excitement. I experience a flow of energy flowing through the cosmos which for me is the loving relationship I have with God. Through the Law of Universal Interaction of Jousse (Jousse 2000) as discussed in the chapter on the scientific evidence for my understanding of learning as a biochemical process, I am able to intuitively feel the love of God and express it among the staff in my workshop. I am able to provide a safe space for the learners. I am neither a “sage on the stage” nor a “guide on the side” (King 1993). I am a different being altogether. A “sage on the stage” (King 1993) teaches known knowledge for a known future. A “guide on the side” (King 1993) walks with the learner into a future that the guide can anticipate. In my world where the future is largely unknown, I can only provide a safe space for the learner to discover his or her way into the future. From my expressions on my face I am displaying a love-filled joy and a joy-filled love within the safe space and community of practice. I express an ontological value through love.

At the time of the recordings, I had no intention of using the videos for my personal research or even as part of reflective practice. All the videos were recorded by the same person, Keith, from the university Audio-Visual unit. After the project was completed, Keith presented me with a gift over and above the recordings of each session. The gift was a compilation of moments in the sessions where Keith felt that I truly inspired him as well as the learners. He had recognised my talents and the flow of life-affirming energy. I sent Keith an email with the following three questions to ascertain what he had recognised in all the videos. Keith’s responses (K Kenneth, personal communication, January 2009) are in bold:

1. What made you choose those particular clips from the videos?
It was Timm's charismatic style and energy that made me choose those clips
2. What three (3) words would you use to describe my expressions and the type of energy I demonstrate in the videos?
Confident, fun, charismatic
3. What (3) words would you use to describe my interactions with the participants in the class.
attentive, responsive

Keith felt the life-giving energy that I presented in the sessions. He felt that during my teaching he was deeply aware of my presence in the class and the connection I made with the learners. I was truly surprised by this and I kept a copy of the video since I was excited about how Keith had actually noticed my passion for what I was doing in the class. He had shown me in my 'Element' which according to Ken Robinson "[is] the place where the things you love to do and the things that you are good at come together' (Robinson and Aronica 2009:8). These things that I love to do and the things that I am good at are my inner secrets which have become known to me through Keith not regarding me as a mere object that he was videoing but interacting with me as a subject. *Whole-being-learning* was happening in that space as Keith recognised my gifts and talents, and integrated his own gifts and talents to compile the video and share it with me as an affirmation of a nurturing relationship that he experienced.

As I view videos of two additional learning and teaching experiences I have a sense of intensity of what I am doing. I bring a quality of nurturing relationship into the safe space as I interact within the community of practice. There is a relational valuing of 'the other'. I am fully present in the class and I include everyone through a systemic influence shown in the professional academic work I do. My response to the cosmos is dynamic and mutual just as my response to the academic staff is dynamic and mutual.

The second video-clip (<http://youtu.be/-bk97Q3w8Do>) (SOP 24, [How do I present at a Symposium?](#)) – Figure 39 was recorded at an Institutional Symposium on *Curriculum Innovation: Promoting Information and Communication Technology to promote Active Learning* which was held at the Rob Roy Hotel on 18 September 2001. This symposium provided an opportunity for all academic staff to share their good practice in the design of learning materials that embed Communications and Technology. We were sharing as part of the community of practice. Each person had a chance to share their use of computers to develop games for active *whole-being-learning*. The empathetic resonance can be experienced in this videoclip at 2:16; 2:55-2:59; 3:23-3:30; 9:13 – 9:17 minutes. The critical incidents are when I am displaying passion and excitement for what I am doing as I share about the setting up of the ELC. The passion and excitement is evident from the movement of my hands and body and in my facial expressions which are all spontaneous.



Figure 39 Institutional Symposium held September 2001 <http://youtu.be/-bk97Q3w8Do>

I have included this third video since it was recorded at a workshop in an unfamiliar surrounding with unfamiliar persons. The third video-clip (<http://youtu.be/qi1W2cKTMpE>) (SOP 25, [How do I facilitate workshops?](#))– Figure 40 was recorded during a workshop that I facilitated at a traditional University in another Province during March 2009. I facilitated a workshop on designing learning materials for staff that were teaching on a Foundation course. The Foundation Course is for students who had not met the entrance requirements for the courses but showed potential to succeed.



Figure 40 Development workshop for staff from a different institution
<http://youtu.be/qi1W2cKTMpE>

The teachers were interested in designing learning materials for their students who were generally weaker in understanding the language of instruction. I was invited to share the process of designing innovative materials that we had developed. I held an interactive workshop during which time we all shared our experiences of designing and developing learning materials.

I felt mixed emotions. I felt excited to be sharing my knowledge. I felt nervous and anxious as I discovered that the attendance of teachers at the workshop was compulsory and some of the senior professors had already expressed unhappiness about being compelled to attend. I did not know any of the lecturers which made me feel uncomfortable. I felt the mixed emotions from the teachers. Some of them were excited about this opportunity to learn whilst others were feeling overwhelmed and challenged by the task at hand especially that of teaching these particular Foundation course students.

When I asked them to share their feelings at the start of the workshop, they expressed feelings of doubt, apprehension even resentment. I observed from the way in which they sat in the room and also in how they interacted with me and others in the room. As I experienced the triphasic interactions (Jousse 2000), I was able to spontaneously express my love, compassion and creativity I felt with the teachers.

From the previous workshops that I had facilitated, I became aware of the ways in which I had used my hands to express myself. Thus in this workshop, I made a conscious effort not to use my hands when speaking. In the first 10 minutes of the session, you will notice that my hands are behind my body – I looked as if I had no arms. As a result of this, I found that I used my eyes when interacting with the staff

by opening them widely or rolling them upwards to express disbelief in a statement. I also used my eyebrows when directing my gaze at a particular person.

Incidents in this clip at 11 minutes show me inviting them into the learning space. At 22:34 mins I am feeling pleasure in what I am doing and it is evident in the life-affirming energy that I am displaying. From 26:26-26:35 mins I am listening attentively to the participants and giving them attention. I am also creating space for the participants to speak. I am fully present in the workshop as evident from the energy and values of pleasure, passion and connectedness that I share at about 58-59:24 mins.

In the three accounts I present above, I provide evidence of my values as I express them in the work that I do. I have shown how my values are sustained over eight years and across different contexts, in a workshop situation as well as in a symposium. Thus education for me is about a classroom with interactive personal relations, community of creativity and compassion.

I concur with Ken Robinson (2009) who believes that many of us have limited conceptions of our own natural capacities. We do not understand our powers of imagination, intelligence, feeling, intuition, spirituality, and of physical and sensory awareness. We do not understand our organic nature in that our minds, bodies, feelings and relationships with others are related holistically and do not operate independently of each other. We do not understand our constant potential for renewal. This lack of understanding of our own capacities is compounded by our education. Many of us leave school unsure of our talents and don't do well at school nor enjoy being there.

Conclusion

In this chapter I have provided an account of my evidence of the biochemical nature of learning from the perspective of educational learning and through an educational lens. I described how *whole-being-learning* can be achieved within a safe community of practice where relationships between teachers and learners and their content are nurtured, talents and gifts are recognised and knowledge is integrated as teachers and learners interact. I identified the following three concerns related to students not engaging actively in *whole-being-learning* which contributes to their low throughput. I am concerned that:

- students do not believe in themselves, and the emotional issues that they experience are getting in the way of their learning.
- students are not actively engaging with the teachers and with the subject matter hence learning is not happening in the classrooms.
- teachers are in a state of despair in their classes and need support and encouragement.

All three concerns point to a lack of *whole-being-learning*. I have examined the extent to which I am living out my values and creating a safe space for *whole-being-learning* through using analysing the human expressions in the multimedia representations of my teaching.

Chapter 7

How does learning happen?: Evidence in the lived experiences of educators and learners

The highest form of human excellence
is to question oneself and others
Socrates

Introduction

In this chapter I provide the evidence for the three concerns mentioned in Chapter 6 and the action taken by myself and the teachers to address the concerns. I share my story and the stories of lecturers who do not believe in themselves and how emotional issues get in the way of their *whole-being-learning*. I also provide evidence of my and the teachers influence in engaging students in *whole-being-learning*.

The concerns are :

- Students do not believe in themselves and emotional issues that they experience are getting in the way of their learning.
- Students are not actively engaging with the teachers and with the subject matter hence *whole-being-learning* is not happening in the classrooms.
- Teachers are in a state of despair in their classes and need support and encouragement

What is the evidence for my concern that students do not believe in themselves and how their emotional issues get in the way of their *whole-being-learning*?

I have evidence for my concern that students do not believe in themselves and how emotional issues that they are experiencing are getting in the way of their *whole-being-learning* in two ways. The first way is described in the form of a story of my own life-journey, the Life of *JNGE-Ginger*. The second way is through the lives of two of my own students who are actually teachers in Higher Education.

How do my emotional issues get in the way of my whole-being-learning?

JNGE's - *Ginger* story came to light in July 2011 when I attended a workshop for Supervision and Examination for Masters and Doctoral students and their supervisors as part of the Transformative Education/al Studies project. I attended as a Doctoral student in the project. The workshop on 21 July 2011 was facilitated by Professor Jack Whitehead. He shared aspects of the experiences of one of his doctoral students, Anat Geller, in the workshop. The most striking thing for me at the workshop was when he shared about how Anat felt 'just not good enough'. As I sat there and reflected, I could identify with that feeling of being 'just not good enough' throughout my life.

It was a strange day since I had woken that morning with laryngitis which was rather difficult for me. I am usually very talkative and have a strong voice that had never let me down like this before. The effect of the laryngitis was no voice to express my thoughts, which meant that I did not do much talking that day. I was uncharacteristically silent. In retrospect, I ask myself "Why was I rendered voiceless?" Well, the answer is that I was required to listen and not to speak, with the result that I heard the phrase 'just not good enough' very clearly. It resonated throughout my being.

On the drive home, I reflected upon this resonance with 'just not good enough'. The words sounded like bells ringing through my being. Was this about something deep within me that had been awoken? Was this 'just not good enough' something deep within me waiting to be expressed? I could not wait to get home that evening and write my story.

Immediately I arrived home I took out my book and pen and wrote my story about being 'just not good enough'. The story flowed out the tip of my pen with ease. I could not type the story on the computer as the thoughts were coming through too fast, faster than I was able to type. I was excited about getting this story out onto the page. The words 'just not good enough' continued ringing through my ears. The first letters of each word of the phrase were JNGE - which became *Ginger* as I said them out loud.

I felt a strong sense of association with being 'Just Not Good Enough'. I could not understand where it was coming from since earlier that week I had felt 'Absolutely Good Enough' AGE- Aggy.

I will share the story of JNGE – *Ginger* just as I wrote it, unexpurgated. I am treating the story as feedback. I have included the original handwritten story as recorded in my journal on 21 July 2011 see Appendix H.

So Delysia, are you really Just Not Good Enough- JNGE?

JNGE - *Ginger* was just an ordinary little girl from the dusty roads and rolling hills of Umzimkulwana. She believed she was Just Not Good Enough, JNGE. Just not good enough to be born of a married couple. She was only good enough for her grandfather to love her and believe in her until the age of 8 years. Well that is what she believed until that Sunday morning when all she could do was cry. Cry because it was four days before Christmas. Who would buy her a Christmas present? Would she get a Christmas present? She thought, as they carried her grandfathers body away, all wrapped in a bag, from the homestead. Everyone else around her was crying. She was not sure if they were sad because of no present or because his voice was no longer to be heard! His Friday nite sweet treats would be missed! Well maybe he was no more because she was just not good enough! She should have listened more and asked less questions. She should have sat still more and not been so fidgety! She was Just Not Good Enough, JNGE, Just Not Good enough!

So she had to go and stay with her Mom and stepdad!. She was Just Not Good Enough to stay with her grandmother and all the other lovely kids in the homestead!. So JNGE set out on a path to be good enough! She worked hard at school. No time to play too much. JNGE had to be Good enough! She would not disappoint anyone again!. She really was as one of her school teachers said "a diligent, hardworking little girl who gave of her best at all times". She was happy. She was excited about being good enough! She would be Good enough one day to become a Doctor. Her mother and family said she would become a doctor cos she was good enough. After all she was Good enough in school. She was no longer Just Not Good enough!.

Alas, soon her mother realised that she may Just Not Be Good Enough to become a doctor! She was sad! She did not have the required subjects at school to become a doctor. Oh my the family dream was not going to be! JNGE, JNGE, JNGE!

The Big Little school in the dusty roads of the rolling hills of Umzimkulwana could not offer the right subjects. The Big Little school could not help JNGE to become a doctor! It was Just Not Good Enough for JNGE. So soon her bags were packed. She was off to the Big, Big, school in the Queen's City.

At that Big, Big school, she could do the required subjects. At that Big, Big school in the Queen's City, there were so many children. So many strange faces. A different language was heard at school. JNGE was not good enough for this Big, Big School was she? JNGE could just about speak and understand the language that was spoken. JNGE had a strange accent when she spoke at school. It was going to be hard for JNGE. JNGE was yet again just not good enough at the Big, Big school. But JNGE soon realised that she had to be Good enough! Many sacrifices were made for her to be there. She had to become a doctor someday. JNGE missed her family. JNGE missed her friends. She missed all the wonderful birthday celebrations at home. She missed all the fun family outings. She was determined to be good enough so that her family would be proud of her. She would be good enough to be able to move back closer to home. The Queens City was more than nine hours drive from the dusty roads and rolling hills of Umzimkulwana.

JNGE worked hard. She was serious about her schooling. She would be good enough. JNGE was going to be good enough. She would get the right pass to become a doctor. She became the family pride and joy. Alas, JNGE soon realised that she could not become a medical doctor. She could not bear to work with blood. She could not be a medical doctor, she could not see such hurt and physically broken people. She was just not good enough. JNGE, Just Not Good Enough!

She worked hard at the Big, Big School. She was rewarded with an excellent pass in Mathematics in her Matric year. She received an A symbol. She was good enough to get a good pass. She even passed the subject that she had missed all the foundation years of study. It was not offered at the Big, little school so she had to come to the Big, Big school to start it and complete within two years. She was good enough, JNGE was good enough to achieve.

JNGE applied to study Pharmacy instead of medicine. JNGE was just not good enough to study Pharmacy at the selected University – she was not the right skin colour they said- JUST NOT GOOD ENOUGH! When will she ever be Just Good Enough, well actually Absolutely Good Enough, AGE - Aggy. Maybe that is who she should have been then her life may have been better. Would it?

After I had written the JNGE – *Ginger* story in my journal, I felt calm and focussed. My thoughts were clear and I was able to complete my Keynote address entitled ***What am I to Transform?*** for the next day's Extended Curriculum programme showcase with consummate ease. After weeks of just not been able to gather all my thoughts into a coherent presentation. I felt that a blockage had been cleared and I was able to engage with the material in preparing the address after weeks of anxiety and tension. I included the JNGE - *Ginger* story in the address as a I explored the need for each lecturer to transform who they are and what they do as a teacher of students in the Extended Curriculum Programmes.

The poem "*Now I Become Myself*" by Sarton (1974) reflected what I felt like after I had written the JNGE - *Ginger* story.

"Now I Become Myself"
Now I become myself. It's taken
Time, many years and places;
I have been dissolved and shaken,
Worn other people's faces,
Run madly, as if Time were there,
Terribly old, crying a warning,
"Hurry, you will be dead before—"
(What? Before you reach the morning?
Or the end of the poem is clear?
Or love safe in the walled city?)
Sarton- 1974

I began to realise that I had 'become myself' after 50 years of wearing "other peoples faces" and realised that I was 'absolutely good enough'. When I said the letters AGE out aloud, I heard another name for myself- AGE - *Aggy*. I had identified my two personal facets of my life- JNGE - *Ginger* and AGE - *Aggy*. I could be JUST NOT GOOD ENOUGH or I was ABSOLUTELY GOOD ENOUGH! When I was JNGE -

Ginger, then I did not believe in myself and felt paralysed with fear and anxiety. When I was AGE - *Aggy*, then I believed in myself and was able to achieve success and engage with the subject matter easily and successfully. I discovered that each of these personal facets played a driving force in my life at different times, sending me on a rollercoaster ride of emotional and productive highs and lows.

I had discovered a pattern in my life. I am reminded of Claude Bernard who said- “it is what we think we know already that often prevents us from learning”. I had convinced myself that I was Just Not Good Enough! Each time I felt just not good enough, I would work hard and persist. At the end of that I would be Absolutely Good Enough. Something in me knew I had to be resilient, to be AGE-*Aggy*.

There was also a game at play in my life here. I realise now that there are emotions that are constantly being triggered that in turn triggered the molecular change in my bodymind (Pert 1999). So part of my life and learning was to always find a way to become Absolutely Good Enough. It came from within me and from my interaction with the environment around me. Each time I managed to excel at what I was doing. I was able to learn a new way to be successful in my life. I was able to balance out the negativity with a positive energy. I found that there was a rhythm to my life. As the universe acted upon me, I was able to interact with it and thereby improve myself (Jousse 2000).

Thus through discovery of my own JNGE - *Ginger* and AGE - *Aggy*, I had an opportunity to step back and look for connections with others – students and staff with whom I interacted. I asked myself- Do they also have JNGE’s - *Ginger* and AGE’s - *Aggy* that prevent them from believing in themselves and doing the best they can to learn successfully?

What evidence do I have of my students who do not believe in themselves? What did I do to influence their belief in themselves?

I identified two academic staff who did not believe in themselves as good teachers and displayed evidence of JNGE’s- *Gingers* and AGE’s – *Aggy*’s. I consider these staff as students whom I taught as an Academic Developer.

How did Sherlien's JNGE influence her whole-being-learning?

Sherlien was one of my students who I believe had JNGE's - *Ginger's* and AGE's - *Aggy's* in her life. I will share some of Sherlien's story through which I discovered her JNGE – *Ginger* and her AGE - *Aggy*.

I met Sherlien when she attended a workshop on *Using Information Technology to Promote Active Learning* that I facilitated in the Effective Learning Centre during March 2001. I invited academic staff to attend the workshop as part of the broader curriculum transformation at the university to “capacitate staff and students in order to facilitate the change from didactic teaching and learning methods to more innovative and effective strategies” (Cooke and Timm 2004). The workshop was part of a series of workshops I offered in the Effective Learning Centre as part of a USAID funded project (Naidoo and Cooke 2000; Cooke and Timm 2004). The series of workshops were contributing towards achieving two objectives within the project, namely, the development of effective learning materials that embedded the SAQA Critical Crossfield (SAQA May 2000) outcomes of communication and the application of Information Technology. I believe that learning materials are effective when they engage the learners through whole-being learning.

Sherlien was a Microbiology lecturer who had formerly been a Technician in the laboratory at the university. She had a Medical Technology National Higher Diploma and was registered for a Masters in Education on a part time basis. She had chosen to do an Post-graduate degree in Education because of her keen interest in understanding more about teaching and learning. I believe that she was a teacher with a sense of vocation (Palmer 2000).

In the workshop on March 2001, Sherlien sat very comfortably towards the back of the room, with a warm smile on her face. She was very softly spoken and had gentleness about her as she interacted with the other lecturers and me.

At the beginning of the workshop, I posed the following question to the lecturers: “Can you please share experiences of whether you believe your learners to be active

or passive learners?” I believed that they each had rich experiences and knowledge of active learning to share. Each lecturer’s knowledge was important and significant to share in the workshop as I was going to use their knowledge as a foundation for further discussions in the workshop.

All the lecturers, except Sherlien, complained about how their students were ‘passive learners’ who did not engage. Sherlien very quietly, slowly, with long pauses as she measured her words carefully before using them, shared her experience with the class. She was hesitant. I recall how she had identified that the learners showed

no eagerness to learn [the subject], no eagerness to come to lectures, no interest whatsoever (SOP 27, Sherlien, July 2009, 1:30 mins)

Her students felt “hopeless” and did not believe in their own knowledge. Then she introduced playing with cards in her class. These cards were no ordinary cards. When her students worked with and played with the cards Sherlien had observed and experienced a change in them. They became eager to engage with her and the subject as a result of the playing of Sherlien’s card games. Suddenly the students had fun in her class. They were interested in learning and the questions they asked her were

“Why can’t we have this in all sections?” “Why can’t we have this in all subjects?”

(SOP 27, Sherlien, July 2009, 5:40 – 5:47mins).

From the questions that her students asked, I believe they were experiencing pleasure in their learning, pleasure in their realisation that they were learning more successfully because of the cards. I believe that their learning was successful because they were integrating the knowledge and experiences they had in other classes (Dewey 1938; Boyer 1990). Sherlien had experienced that developing and planning to use the games was time consuming and she did not have the time to do it for her whole course and she also believed that her fellow lecturers were able to commit the time to the development of such learning material.

Sherlien was very hesitant to share what she was doing in her class as she believed that she was 'Just Not Good Enough' as a university lecturer because she was using games in her class. She had been told by her colleagues that to be good enough your students had to engage in 'serious learning' and playing card games consequently was considered not serious. When her students engaged in card game playing, they were noisy. She was told that it was not good to have a noisy class as she needed to be able to control her class – she was 'Just Not Good Enough'. She did not believe that she was doing anything good in her class as she did not believe that she was good enough to be a teacher until she had a quiet, controlled group of students in her class.

Sherlien was very shy to share what she was doing with her learners in playing games and she did not feel valued for what she was doing in her class. She felt she was 'Just Not Good Enough' as she was making cards out of chart paper and coloured pens for her students to use in playing the game. She felt that she was not professional or sophisticated enough in her production of her games. Sherlien attended the workshop to learn how to design and develop a 'professional set of cards' using the computer. I was amazed when I saw the handwritten card that Sherlien had already developed and used.

Sherlien invited me to observe her class playing the games. I have no audio or video recording of the visit. However my memory is still very clear about what I observed that day. I observed a class where there was engaged *whole-being-learning*. The students were clearly interested in learning. I observed their faces and the shine in their eyes (Zander 2009).

They were keen to talk to each other and to listen attentively to each other. They were noisy as they made their voices heard. They did not want to leave at the end of the session as they were so engrossed in 'proving' to each other that they understood and knew the content of the course which enabled them to win the game. I overheard serious debates and discussions about their answers and

witnessed the 'cheating' that Sherlien had identified. I was excited to see what was happening in the class!

I encouraged Sherlien to use the ELC to develop the card games further using the computer facilities available. I also encouraged her to share her experiences at one of my other workshops I was going to facilitate. I had recognised the talents and gifts she had to offer. Furthermore, I invited her to present her work at an Institutional symposium in September 2001 – her video of her presentation is available on Youtube™: <http://youtu.be/qi1W2cKTMpE> (SOP 28, Sherlien, July 2009). Initially, she was astonished which was evident in her facial gesture and her voice. She gazed directly at me with raised eyebrows. She had a raised tone of voice that had an upward inflection as she posed the question in her response,

“Oh no, not me, I am not good enough to present to all the lecturers! Are you sure that I will not be rejected by them as this is not really serious Higher Education learning?”

She felt “Just Not Good Enough”! She did not believe in herself!

This response from her of not being good enough had a deep-seated paralysing history. During conversation with Sherlien, I learnt that she was previously employed as a Laboratory Technician and as such was made to feel Just Not Good Enough by her colleagues. These colleagues had not been Technicians at all in their lives. They believed that Technicians were not good enough to be lecturers or academics. Sherlien had shown that Technicians are Absolutely Good Enough to be lecturers when she was appointed as a lecturer and had experienced success with her students.

She could not believe that I was actually recognising her talents and gifts that she brought to the class. She could not believe that someone cared about her and her work that she was doing with her students. I provided a safe space for her to grow and fully realise her potential.

After a week, Sherlien agreed to develop her materials using the computer software in the ELC to make them “Absolutely Good Enough”.

During this time in the ELC, Sherlien engaged with other lecturers who were using the centre and they showed an interest in her work. Within the month, Sherlien agreed to share her work during a workshop session, she then felt “Absolutely Good Enough”! See Appendix I for a copy of Sherlien’s powerpoint presentation. Sherlien made the video-clip of her presentation available for viewing on Youtube™ at the following address: <http://youtu.be/qi1W2cKTMpE>. Sherlien became excited when a group of Chemistry lecturers- Penny, Shubnam and Nalini joined in the development of a board game for chemistry and one of her colleagues in her department, Derrick, designed a board game. Both Sherlien and Derrick presented their innovative teaching methods at the Mini-Congress of Society of Medical Laboratory Technology of SA (SMLTSA) held in February 2002. See copy of the programme in Appendix J. (Govender 2002; Prithelpaul 2002)

When I shared with her that I was excited about ‘walking the road with her’, she replied

You have given me the courage. We have walked the road together
(Sherlien, 19:07 mins, personal conversation)

In our walk, Sherlien believes that I have given her the ‘courage’ to be who she truly is – a good teacher. I have chosen not to colonise her into my way of being but rather to co-fraternise with her as my student (Jousse 2006). What is the difference then between colonising and co-fraternising? To colonise is to “ ...conquer whole groups of other humans physically and physiologically by capturing and crushing them” (Jousse 2006:144).

On the other hand to co-fraternise is to

...conquer a single human being by captivating and empowering him (sic), appealing only to [her] anthropological capacities for growth and change (Jousse 2006:144).

I had not “captured and crushed” her but rather “captivated and empowered her” to enable her to grow and change through a triphasic interaction. When I asked her about the changes that happened to her and her learning in this process, she thought deeply and reflectively for a few seconds before answering in a very slow and carefully worded response

Ummm, it made me more aware of different learning strategies and it made me a bit restless as well because (*pause*) I am not satisfied anymore with quite a few things.

I am not satisfied anymore with, like I said with students sitting there and I am standing here. That doesn't work for me anymore. I am not satisfied with students sitting quietly in class. I want noise. I feel if students are sitting quietly then there is something wrong – they either don't know what is going on or they scared of me or they not part of the process. (*pause*) errrr it has made me more open to the students point of view- (Sherlien, 9:15-10mins: personal conversation)

Sherlien became 'restless' in that she was continuously seeking for something new and different to do with her learners in the class. She became an ardent reader and seeker of different ways of teaching. She was eager to learn, eager to do something different with her learners. She wanted them to question and engage her and the subject (Xenophon 1897). She definitely wanted a different relationship with the learners in her class in which both her and her learners are equal partners in the learning who appreciate each other as people (Xenophon 1897; Palmer 1993). She confirmed this when she emphatically and confidently reflected that:

You know you operate on a totally different level (*pause*) and that is absolutely amazing. (*pause*) Like I said you start seeing your students as more than just students. It makes them more willing to come and tell you personal things. You know whereas previously they wouldn't relate to you, they wouldn't talk to you and then suddenly you get this outpouring of emotions and feelings, things that you didn't bargain for. It just changes. ...you become like a facilitator you become a confidante, a friend, more than a lecturer you no longer seen as just a lecturer, you seen as somebody that can do things for them and who is willing to do things for them. I think that is the thing. You willing to do things for them (Sherlien, 10:40 – 11:24mins personal conversation).

Sherlien no longer saw her students as objects, but rather as humans with emotions and feelings. She had an attitude of service to her students (Greenleaf, R 1977). She was in a caring and nurturing relationship with her students as they regarded her as a 'confidante...do things for them'. So her restlessness was about searching for ways to be of service to her students. She believed in them and expected them to get actively involved in the class to the extent of creating their own posters and learning material. She always managed to get the 'most amazing stuff' from the students that other lecturers were unable to get from the same students. She was

deeply concerned that lecturers who taught the same students saw the students in a negative light as being demotivated and not bothered to do anything for them whilst they produced the most amazing work for her. Sherlien was able to interact with her students through co-fraternisation rather than through colonisation. I noticed that Sherlien used “you” in this conversation when she was meaning “I.”

Sherlien had similar experience as a Masters student where she felt frustrated about her own studies. She was half-way through her Masters in Education and for the past few years, had not engaged with completing her studies. She did not enjoy sitting in that “normal lecture mode” with the lecturer seen as the imparter of knowledge and her the passive receiver – it just did not work for her not being an active participant in her own learning, she was not interested, and it did not make sense. Sherlien’s concept of learning is

Doing, more than seeing, errr, doing by yourself, you involved in it, not watching someone else doing it, errr, and I suppose it is all your senses, not just looking you could physically do something, but your mind is elsewhere you using your mind, touch feel you using your emotions cos you involved and you playing with somebody and you talking and you trying to justify what you doing err rationalising thinking, forward thinking because you not just stuck in that mode you thinking about well what’s next what am I looking for, what do I need to complete this set, errm and also the relationship between the students , its you setting the groundwork for forming a relationship with them that you wouldn’t otherwise have had. Playing a game with somebody, you realise, well he is a good partner- he knows something, but she I can hoodwink... so the next time around am I going to be sitting in the same group because I am going to win or do I work with someone who knows what is going on so that I can improve what I know (Sherlien,16:09- 17:20mins, personal conversation).

Sherlien has an understanding of learning as *whole-being-learning* involving “all your senses,...physically...mind...emotions...talking”. She felt “I am not an active participant, nothing made sense, why should I bother” (SOP 27, Sherlien, July 2009, 18:06mins). She said this with a sad voice as was evident by the very low, drawn out, slow, ‘Just Not Good Enough’, tone of voice. Unfortunately, Sherlien never did feel ‘Absolutely Good Enough’ about her studies no matter how much I encouraged her. I observed that Sherlien spoke with no enthusiasm or energy or joy about her own studies. She was not interested or excited in her own studies, there was no emotional connection. She did not see any relevance to what she was doing in her

studies to her teaching in the classroom. She felt 'Just Not Good Enough,' and 'dropped out'. I believe that Sherlien's teachers failed – they were indeed 'Just Not Good Enough' JNGE- *Ginger*.

Through Sherlien's story, I believe that the academy in the form of her work colleagues and teachers had convinced her that she was 'Just Not Good Enough'. My belief in her ability to engage her learners in active *whole-being-learning* helped her to believe that she was 'Absolutely Good Enough'. She was able to be in her *Element* - recognising and using her talents (Robinson and Aronica 2009). She felt nurtured in the 'safe space' that I was able to provide for her through the community of practice. She was able to experience active *whole-being-learning* in herself when she participated by sharing her expertise in the community of practice. Her relationship and connection with her learners had also improved positively as they experienced her nurturing in the 'safe space' she created in her classroom.

I considered Sherlien to be an excellent teacher who cared for her students and thus approached her to apply for the HELTASA National Teaching Excellence award in 2007. I believed that Sherlien viewed her teaching as a vocation – “an act of dedication to her students” (Boyer 1990:4). However, she declined my nomination because she felt that she was 'Just Not Good Enough' even though she had all the evidence of excellent teaching practice. It was only in 2011 when her Head of Department and Executive Dean nominated her for the award that she submitted an application. I submitted a testimonial on her request as I truly believe that she is an innovative and caring lecturer. See Appendix K – a copy of the testimonial that I wrote for Sherlien.

Sherlien's application was successful and she became the second recipient at our university of this National Teaching Excellence Award. At her acceptance speech, Sherlien spoke for twenty minutes sharing her heartfelt thanks without any notes or memory-aides. It was very sad for me yet joyous as well. I was sad because she stood there looking very thin. She was weak and her face was filled with pain. She had been diagnosed with abdominal cancer three years earlier and had been through numerous chemotherapy treatments, and she was not winning the battle against the cancer. HELTASA had made a special arrangement to honour her before

the official award at a small ceremony at our university due to her deteriorated health. I heard and saw how Sherlien had at last believed in herself. She was “Absolutely Good Enough”! Sadly, Sherlien passed away three months after she received the award.

How did Ingrid’s JNGE influence her whole-being-learning?

From my personal experience I found that JNGE’s - *Ginger* can also be as a result of stress in my family situation. Ingrid, an academic staff member and one of my students, experienced how stresses in her family life and the University can create a JNGE - *Ginger* within a person.

Ingrid is a lecturer in the Department of Homeopathy who has also had experience of being ‘Just Not Good Enough’. I first met Ingrid when she attended one of my workshops on *Using Games to Promote Active Learning* in October 2004. I recall Ingrid sitting quietly in the workshop. She was quiet and I noticed that her eyes were dull when she walked into the workshop. As the workshop unfolded, I noticed that she did not share much. Ingrid was deep in thought and at times appeared a bit distant in the workshop. At the end of the workshop she expressed gratitude for the workshop and said that she had some thoughts that she was going to explore. I did not persuade her to share her thoughts, but indicated that if people needed further assistance they could call me or contact me. I would now say that she did not believe that her ideas were good enough- or rather that she felt ‘Just Not Good Enough’.

About six months later, I received a call from Ingrid inviting me to come over to her department and see the game that she had developed. I was pleased that Ingrid was excited and had shining eyes (Zander 2009) as she showed me her game and proceeded to describe what Ingrid had done. I could see that she was at that stage feeling Absolutely Good Enough!

During our conversation on her reflections of using games for learning, she expressed with sadness and uncertainty in a low, slow, quiet voice, that she had “always battled with like confidence issues” (SOP 30, Ingrid, May 2009, 11:52 mins). In 2004 her confidence had been further shattered by the loss of her baby daughter,

Amy, who died at birth. She had just returned to work in September 2004 and was looking for a new lease on life, a new sense of creativity and seeking for wholeness. She shared about feeling 'Just Not Good Enough' in a very painfilled tone of voice and with some nervous laughter in the conversation. She shared about feeling "broken" and the need for a sense of "accomplishment":

I think all through my life I felt broken and this was like just like the last tragedy, was like see, I am not even worth it, I can't even have a kid I think that feeling was was huge, like I lost my baby I am useless and then (*pause*) lucky I had a very very good husband – (*laughter*)- and slowly I began to sit and think, no wait. And probably that is why I developed the board games is to have this sense of accomplishment in something... umm you know maybe I can't have a kid but I can do something completely unique in our department. (SOP 30, Ingrid, May 2009,14:20mins)

I noticed the droop in her mouth and her shoulders as she spoke to me. I heard a sadness in her voice before a nervous laughter when she spoke about her husband. Her husband supported her in the development of her boardgame by purchasing the materials that she used from a local hardware. He showed an interest in her work. He recognised her talents and nurtured her in the development of her boardgame through his support. He cared for her. She was thus able to shift from "I felt broken", "I am not even worth it" and "I am useless" which I saw as being 'Just Not Good Enough' to a feeling of 'Absolutely Good Enough' when she was able to venture out and experience a "sense of accomplishment" by doing "something completely unique".

Having fun was not easy for Ingrid as she believed that Homoeopathy profession and homoeopaths had a tendency to think that they were in a serious business where there should be no fun. I sensed that this serious approach to life made Ingrid tired of "wearing someone else's face" (Sarton 1993) and not being herself, having fun. She used a very dramatic staccato, matter of fact type voice placing deliberate emphasis on each word as she shared about the serious nature of her course.

Our course is very (long pause) serious, you know it is all facts and figure you know, you gonna die or you gonna make a patient die (SOP 26, Academic staff - Ingrid, September 2009,20:08 mins)

No whistling is allowed down corridors cos you [I am] not suppose to be **happy** (SOP 26,Academic staff - Ingrid, September 2009, 49:51 mins)

This place is depressing and our department is **so serious** and nobody is allowed to laugh. (pause) I feel sad (SOP 30, Ingrid, May 2009, 10:08 mins).

She particularly emphasised the words “**happy**” and “**so serious**” as she spoke about her department with such deep feelings of unhappiness and sadness. She experienced a force of oppression from her colleagues to be serious and not happy at work and was emotionally stressed. She was unable to experience true spontaneity in her teaching.

Ingrid was subjected to an education system in which spontaneity has been killed and according to Jousse

For us, science has become gravely serious. It has become immobile. When one goes to introduce oneself to a savant, one always imagines a grave immobility, answering in monosyllables, with a fixed stare that searches the infinite. Which is why it is sometimes somewhat disconcerting to find oneself standing in front of someone who is, to the contrary, vital and alive (Jousse 2005:52).

When I encouraged Ingrid to have fun in her teaching using board games, she began to believe in herself as being vital and alive. She discovered her creativity and was excited as evidenced in the upward lilt and quick, light tone of voice as she said

I have never been a creative person in my life, but hey, I created something quite useful.(long pause) and that does not need to stop at work...I have become more positive and played games with my child who is now three and a half...I can not feel stupid cos its ok to be a kid, cos it keeps you young and ...energetic (SOP 26,Academic staff - Ingrid, September 2009, 48:53 mins – 49:52,)

Ingrid also recognised that being ‘Absolutely Good Enough’ was not restricted to her work only, but was applicable to her life in general. She wanted to “enjoy what [she did] and give [her] best to what [she was] doing at the moment” (SOP 30, Ingrid, May 2009, 16:52 mins,) through the board games for learning and having fun in life.

Ingrid further went on to share about how she has now continued whistling in the passages and brought the laughter and fun into her classroom through the use of games as she has increasingly found that she is ‘Absolutely Good Enough’. Feedback from Ingrid’s students indicate that they have engaged in active *whole-*

being-learning through the games. They have experienced joy and pleasure in their learning using the games which they have expressed as

“[games] adds interest and excitement to education” (SOP 31, Ingrid’s 4th year homoeopathy student 4-3, June 2009)

“teaching with games also helps the mind to achieve its full capacity to recall and make knowledge as much part of the entire being as the heart the blood it pumps” (SOP 31, Ingrid’s 4th year homoeopathy student 4-1, June 2009)

“easily remembered anything without being feeling forced” (SOP 31, Ingrid’s 4th year homoeopathy student 4-2, June 2009)

“you never feel pressurised to know (...) I enjoy playing games because it is fun – this makes you feel like yur(sic) not actually expected to perform, and yet you do!” (SOP 31, Ingrid’s 4th year homoeopathy student 4-4, June 2009)

I believe that Ingrid’s students consciously ex-press what they know in their viscera spontaneously which was clearly shared by her students. The students’ experience is explained by Jousse

As soon as you allow yourself to think, the mimeme mechanism automatically and spontaneously comes into play. And this happens even when you would rather not think... so much are we lead, so much are we played by our intussuscepted mimemes (Jousse 2005:38).

Ingrid had experienced whole-being learning and changed from her JNGE - *Ginger* to her AGE - *Aggy* through the safe space that was created for her to believe in herself. The safe space is a community of practice where her deep-seated paralysing effect of the loss of her daughter was changed to a vital, dynamic life through the unleashing of her creative potential. Through providing the space and nurturing for Ingrid I was able to help her recognise her talent and gifts. Through this she was able to use the games to encourage whole-being learning in her students.

After writing this story, I sent an email to Ingrid on 18 September 2012 for comments: “Please tell me what you think about what I have written about you, and me.” I received a response from Ingrid on 18 September 2012:

Dear Delysia

Wow you made me cry. What a long way I have come from that time! Yes it does sound like me.

I am so glad I have kept the spirit of having fun alive as the students really respond to it. I thank you for this time of reflection.

Ingrid

What evidence do I have of students not actively engaging with the teachers and with the subject matter? What did the teachers do? What evidence do I have of my influence? What evidence do I have of the teachers influence?

I will share the stories of four lecturers who were concerned that their students were not actively engaging with them nor with the subject matter in the class. The four lecturers, were Ivan, Derrick, Dorinda and Anisa.

How did Ivan use games in his classroom to influence his students whole-being-learning?

In 2001 I met Ivan who was a lecturer on the CHELTA (Centre for Higher Education Learning, Teaching and Assessment) programme for new lecturers at the university. I was his mentor and we had numerous conversations about his teaching strategies especially as he had never taught before and had no educational qualifications. I found Ivan to be an innovative, dedicated and committed teacher.

Ivan values teamwork as he readily worked together with either myself as in the case of games development or with the Audio-Visual unit to produce the DVD's of his students work. The students in his class worked in teams for these various projects.

Ivan teaches Occupational Health and Safety students who are registered for a Diploma in Environmental Health at the University. In 2004/5 he used games for the section that dealt with students gaining an understanding of legislation that dealt with the Occupational Health and Safety Act. Ivan was concerned that the students experienced difficulty in understanding this section of the course.

During a personal conversation with Ivan, he stated that the “students found that particular aspect of the course boring” (SOP 32, Ivan, July 2009, 13:58mins).

I recall how Ivan smiled with fond recollection of how he too, as a former student, of the same course had experienced difficulty with that section of the course. He shared with me about how his lecturer had just read through the section in class. He and the other students did not engage actively with the lecturer or the subject matter whilst in that lecturer’s class.

Ivan wanted his students to be actively involved and he “wanted to teach them the way I would have wanted to be taught (...) change and get them involved” (SOP 32, Ivan, July 2009,14:39 mins). Ivan was concerned that the students were challenged due to the fact that in his class “90 – 95% of the students English is a second language” (SOP 32, Ivan, July 2009,2:08 mins). The medium of instruction for them was English, their home language was isiZulu. The students were forced to read English and understand the legal jargon of health and safety legislation as there is no isiZulu translation of the legislation. The challenge of language issues related to student engagement and student success is not foreign in Southern Africa (Jansen 1998; Afonso 2007).

Ivan believes that learning “occurs from your experience and what you can see in reality what takes place then you can understand why you need to learn certain concepts.” (SOP 32, Ivan, July 2009, 26:28mins). I believe Ivan is referring to what Jousse describes as

Man instinctively and naturally embraces concrete experiences, and resists venturing into the algebraic mode of dislocated representation (Jousse 2004:23).

Jousse further describes the “algebraic mode” as being a

system of artificial signs that represent nothing in themselves but which we have nevertheless to assimilate, and out of which we must construct meaning (Jousse 2004:23).

The artificial signs of the algebraic mode are alphabetic scribal writing. To move from the “concrete experiences” to the “algebraic mode” the learner moves from a vitality to an inert act of reading. There is a vitality as the learner experiences their “surrounding reality holistically [in their whole being],...relives [the geste] and expresses [the geste]” (Jousse 2004:24) as a Mimodrama, which is full of energy and life. The Mimodrama – an ex-pression of concrete reality, is reduced to a fixed form, a Mimographic ex-pression such as a drawing which is abstract, and then further reduced to scribal alphabetic writing in the algebraic mode. When the vitality of the concrete experience is reduced to words on the page, disconnection and boredom set in which Ivan understood intuitively and set out to do something about.

I believe thus that Ivan’s students were not engaging as they could not ‘construct meaning’ from the words of the legislation on the page so I encouraged him to attend a ‘safe space’ Community of practice session that I had organised in the ELC during October 2001. During this session, Sherlien and two other lecturers, Shubnam and Penny shared their passion and knowledge of using games for engaging students in active *whole-being-learning*. They shared their process of how they had developed the games for the students to actively engage in *whole-being-learning*. Ivan listened carefully and attentively to what they had done. From the triphasic interaction (Jousse 2000) with the other lecturers, he went a step further than Mimism (Jousse 2000). Ivan intussuscepted and integrated the gestes within his whole being (Jousse 2000). He displayed true scholarship of teaching (Boyer 1990) by transforming and extending the knowledge he had received, and then entered a creative new direction in his teaching. Ivan “created a common ground of intellectual commitment” with his students (Boyer 1990:24). He did not follow the other lecturers and design games for the students. **Ivan asked the students to design the games themselves.** This was not laziness on Ivan’s part, but rather his understanding that the **design** of the games enabled learning of a different kind at a different level, than playing the games.

Ivan had engaged in the scholarship of integration as he displayed the “power of critical analysis and interpretation” in the use of game design for his particular students (Boyer 1990:20) Ivan’s students designed their own games for engaging active *whole-being-learning* of the legislation. The students read the legislation and

made their own notes in a language they understood. Then they developed the questions for the games, designed the board games and played the games in class.

Initially, the students did not believe in themselves. They said they were not creative and could not develop games. Ivan laughed as he reflected on the conversation he had with his students:

Student : “We are not Artistic, we are Science and Environmental Health students...”

Ivan : “Yes, you are Environmental Health students. If you don’t have the special creativity or innovativeness, then you can go and find someone who has the creativity... (*laughing*) find a friend, make a friend, go to the Architecture department or go to the Fashion Graphic Design department and make a friend there...” (SOP 32, Ivan, July 2009, 16:56 mins).

He encouraged them to integrate with students that was outside of their discipline from across the campus. He encouraged them to go out and find others who were creative. Ivan had included me on the list of people with whom the students could interact. The students took up the challenge and were very creative in their designs. I interacted with the groups of students who contacted me and noticed how they changed from the first visit when they did not believe that they could develop games through to the time when they were designing their games and using the computers. For many of them it was the first time that they used computers. The games also afforded the students an opportunity to develop their organisational skills in working with other students and with people other than their lecturers. The groups were required to schedule appointments with me as a group. They had to align their available time with my availability to meet with them so they learnt about time management. They were also required to purchase their own materials for the games that they developed as these resources were not available from the University.

Whilst working with the students I was able to recognise the talents they had within them and affirm their creativity (Huxtable 2009; Robinson and Aronica 2009). The final game that each group of students produced was peer assessed and assessed by Ivan as well. Their emotions of fear changed to joy and love for what they were doing.

Both Ivan and I found that it was 'fun and dynamic' working with the students in that they always asked questions and took initiative in the design and development of their games. Ivan recalls how the students impressed him by taking the initiative to buy games off the shelf to see how games are made and then by getting others to support them in the construction of their games.

There was a group of students who did something differently. They had friends studying Information Technology (IT) who worked with them to develop a multi-media game on the computer. They went beyond the paper and board type of game that others had developed. The students had become the 'questioning ones integrating with the known ones' triphasically (Jousse 2000) as they interacted with the IT students to develop their games. This situation led Ivan to refine his criteria for the development of the games. His criteria were interpreted differently by the students. He found that the students engaged him regularly out of class to discuss the developments in their games. He was able to nurture them through the difficulties they experienced whilst developing and playing the games. He found that their level of interaction and debate in the class increased whilst playing the games. He was often called to mediate the differences of opinion in the answers or interpretation of the questions that the students experienced.

The students enjoyed developing the game to the extent that they made a choice to miss other lectures and rather spend time developing the game. Consequently Ivan was not popular amongst his colleagues. Ivan's students valued the way in which he engaged them in their *whole-being-learning* as he recalls with great joy in his speech that they said "nice to see that you human" (SOP 26, Academic staff - Ivan, September 2009, 43:11 mins). His students were able to relate to him as a human being showing feelings and care for them in his relationships with them.

Furthermore, the Health Professional Council of South Africa (HPCSA) reported that the students from the Durban University of Technology (DUT) were more employable than the students from other neighbouring institutions. Ivan believed that the understanding they gained through the development of the games contributed to their employability. From his interaction with the students in Industry, he has noticed they are able to quote and implement the legislation with secure confidence which is a requirement for their jobs.

Ivan offered his knowledge of using games for activating *whole-being-learning* as a gift to himself and others successfully by delivering a paper at a National Conference (Niranjan 2004) and completing a Masters research study (Niranjan 2005). The title of his dissertation was “*Evaluation of Training and Development technique amongst Environmental Health learners: An Alternative model using the Occupational Health and Safety Act, 1993 (Act 85 of 1993).*”

Ivan does not use games every year in his class because he does not want the students “to second guess” ...” (SOP 32, Ivan, July 2009, 3:05 mins) him and lose the excitement of the games. He has further encouraged the students to produce DVD’s and process models to enable and demonstrate their *whole-being-learning*.

How did Derrick use games in his classroom to influence his students whole-being-learning?

Derrick and Sherlien taught in the same Department of Medical Sciences at the Durban University of Technology from 2001. Derrick was influenced by Sherlien to use games in his teaching of Chemical Pathology for Biomedical Technology students (SOP 26, Academic staff - Derrick, September 2009, 4:58 mins). Derrick valued the “fun and buzz” (SOP 26, Academic staff - Derrick, September 2009, 5:20mins) in the classroom when the students were engaged in activities such as game playing that promoted *whole-being-learning*. He valued collaboration amongst his students as they worked in groups. Derrick’s concerns with his students were that they do not:

- remember basic concepts
- calculate correctly
- integrate subjects
- use appropriate SI units
- know aspects that a Medical Technologist “ought to know” (Govender 2002)

Derrick used two approaches. Firstly, he developed games for them to play just as he had seen Sherlien doing in the department where they worked together. During a

Community of Practice sharing session in the ELC, Derrick interacted with Ivan. He learnt through interaction with Ivan that students could develop their own games. He was excited about this and approached me to assist him.

One of Derrick's main concerns was that he did not want the students to design a game for his subject only. Derrick required them to integrate all that they had learnt from other subjects into one game.

Derrick thus set an assignment for groups of students to develop their own games. They adopted the same process as Ivan in that the students had to first formulate their own questions for specific sections that Derrick allocated to each group. The student's design process moved from the "algebraic" mode of the written alphabetical scribal writing of the questions, to the "mimographic" drawings of the board games that had to be appropriate for their content, to the "mimodrama's" as they engaged in active *whole-being-learning* whilst playing the games (Jousse 2000).

Meanwhile I provided a 'safe space' in the ELC for the students to meet and develop their games. I engaged with the learners as they developed their games. I observed how they had been filled with fear and feelings of hopelessness when they first visited the ELC. They did not believe that they were creative. They did not believe that they could develop games as many of them had never played board games before. During my discussion with them, they expressed concerns that playing games was not actually learning. They did not believe in Derrick's ability to teach them. They felt game playing and design was only about having fun. However after they had developed their games and received their assessment on their design of the games, they were very excited at their achievement. They also enjoyed playing the games (SOP 32, Derrick (2), July 2009, 1:51:mins). They also found that they had learnt so much about the content through formulating the questions for the games. While they played the games amongst themselves, they soon realised that the questions had to be very carefully worded. Derrick found that the students "debated" (SOP 26, Academic staff - Derrick, September 2009, 46:49) about the questions and had deep discussions about the content as they played the games.

From the pictures of the games taken while the students were playing (see figures 41 - 47) it is evident that the students were artistic in their designs. The students

used different colours for each of the subjects they were required to integrate in the game as evident in figure 41, 44 and 45. Their creative potential had been realised as they were nurtured in the development of their games and they had used the “opportunity to get to know what they can do only by actually [doing] it” (SOP 26, Academic staff - Derrick, September 2009, 43:39mins). Derrick observed how while the students were playing the games, they were all engaged in searching for the answers to the questions posed. He observed the students “had become all-rounded persons, not just sitting there quietly in a box” (SOP 32, Derrick(2), July 2009, 2:56 – 3:13 mins) Figure 43 shows how the students were consulting their textbooks to gain clarity on a question and answer that was given by the students. Figure 46 shows how the student is using his hands as he engages with his physical body to explain what he is saying to his fellow students. Derrick recalls with a sense of achievement in his voice, how the students showed such eagerness to engage in the active *whole-being-learning* by actually asking for the games to play with them outside of class. (SOP 32, Derrick (1), July 2009, 10:57 mins).

I believe that Derrick’s students engaged in active *whole-being-learning* as they came to recognise their own talents in asking questions and designing games, connected with the content of the various subjects, used their whole bodies, minds and emotions while playing the games. Derrick had provided the students the opportunity to create, offer and accept gifts of knowledge to each other and to future students who would also use the games for learning (Huxtable 2009). Through interaction with Sherlien and myself, Derrick was also able to integrate his knowledge as his gifts and talents were recognised and offered to others when he presented his work to the public at the Mini Congress of Society of Medical Laboratory Technology of SA (SMLTSA) (Govender 2002).



Figure 41 Derrick's students playing board games



Figure 42 students engaged in question and answer session



Figure 43 students reading the textbook to settle a dispute about an answer



Figure 44 More board games

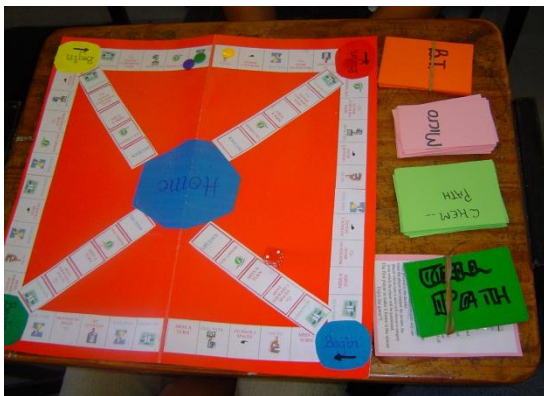


Figure 45 colourful boardgames integrating four subjects



Figure 46 engaging in more game playing



Figure 47 writing out an explanation during the playing of a game

After writing this story, I sent an email to Derrick on 18 September 2012 for comments: "Please tell me what you think about what I have written about you, and me." I received a response from Derrick on 20 September 2012:

Hi Delysia

I have read my aspect of your thesis and have made some corrections/changes, etc. Most were well captured.

Thanking you.

Warm regards

Derrick Govender

I had incorrectly captured the name of the Mini Congress at which he presented his work.

How did Dorinda use games in her classroom to influence her students whole-being-learning?

My first interactions with Dorinda as a lecturer in Somatology, were during curriculum development workshops that I facilitated for the Department of Somatology in 2005. Dorinda is a very vibrant teacher in the Department of Somatology in the Faculty of Health Sciences at the Durban University of Technology. She is always eager to try out new teaching strategies and meeting her students' needs is her central concern. She values having fun while learning. She values students having a voice and actively participating in her class.

She completed her Masters in Education qualification in 2010 as a part-time student. As a student she was required to do assignments and attend lectures as well as

complete a mini-dissertation. She could identify with her own students as a student herself. Dorinda observed that her students were “bored”:

I realised how boring doing an assignment and just physical writing and that can kind of structured assessment... and for me... I also wanted something innovative, something exciting not only to stimulate the students but something to stimulate myself...at the same time it is a two way thing cos I am learning from the students as what maybe excites them, what makes them passionate, what makes them tick... (SOP 34, Dorinda, July 2009, 1:36 -2:06 mins).

At the end of 2008, my colleagues Shubnam and Nalini in the Academic Development Unit offered a workshop on *Using games to Promote Active Learning* for the academic staff. Their workshop was influenced by my workshops that they had attended in the early 2000's. Dorinda and some of her colleagues in her department attended the workshop and returned very excited and motivated to use games in their classrooms. Dorinda taught students in a third year course on Aromatherapy and Reflexology. Dorinda was concerned that the workload for the course was huge with many facts that the students had to memorise. She was averse to many theory tests as she believed that the students in her class needed to be hands-on and be able to apply the theory. The Aromatherapy and Reflexology course was very practical in nature with the students performing aromatherapy and reflexology treatments in the clinic. Dorinda observed that her students were very creative, and she believed that the students' creativity in the other courses such as Aesthetics could be better demonstrated.

Nalini and Shubnam, two of my Academic Development colleagues, facilitated a workshop for all Dorinda's students on designing games for learning. Dorinda designed her students' assignment with many 'building blocks' and included a written assignment, a game and a poster –see *Appendix*... Dorinda shared that the students were not getting along with each other very well in the class. There was not much interaction at all between the students. She had divided them into groups of 5 to 6 students each for the project. Each group designed their own games for learning which they actually had an opportunity to play in the class. Playing the games provided an opportunity for the students to connect with each other in the classroom as they engaged in *whole-being-learning*. The students said the games project:

Makes you interact with other people...make friends (SOP 35, Dorinda's 3rd year Somatology student 3-7, July 2009).

Brings the class together...(SOP 35, Dorinda's 3rd year Somatology student 3-3, July 2009).

Dorinda spoke passionately and in a very caring tone about her students having a voice in the class. She felt satisfied as she observed that through the games, the students became more involved in their own learning. She very thoughtfully reflected on how the students were able to make mistakes and not be ridiculed while playing games. The emotion of fear that students experienced in class was removed as the playing of games "gave them more confidence to speak what they would like to say or have a voice, whereas normally they feel too intimidated to answer the question" (SOP 34, Dorinda, July 2009, 7:54 mins).

I observed Dorinda's students playing games and noticed that they were actively engaging in *whole-being-learning* in the class. They were participating by responding to questions and engaging each other in debate and discussion. They were also listening attentively.

"All the students that shared their experiences in writing and in the focus group enjoyed playing the games and felt "happy and "excited" "like children"" (SOP 36, Dorinda's 3rd year Somatology Focus group, July 2009, 2:37mins).

The students were giggling as they recalled the excitement they experienced. Through the playing of the games, they definitely experienced a loss of the feeling of boredom and students felt an emotion of joy that influenced their learning positively (Pert 1999) :

"Using games makes learning more exciting and if used in lectures it would hold the interest of the class and lectures wouldn't seem so long and boring" (SOP 35, Dorinda's 3rd year Somatology student 3-4, July 2009).

"You do not get tired or bored" (SOP 35, Dorinda's 3rd year Somatology student 3-8, July 2009).

I observed the students playing the games and indeed there was an air of excitement and joy when they played the games. Dorinda was excited to see that one of the students who was always half-asleep in class was listening more carefully and taking notes to ensure that she had the answers for the questions that would be

posed during the playing of the game. The students confirmed that they did pay more attention in class and listen more:

“you remember the voices you heard” (SOP 35, Dorinda’s 3rd year Somatology student 3-12, July 2009).

“I wanted to listen to the presentation” (SOP 35, Dorinda’s 3rd year Somatology student 3-19, July 2009).

“encouraged [me] to be attentive” (SOP 35, Dorinda’s 3rd year Somatology student 3-9, July 2009).

When the game was played, the students were physically active and participated fully in the game in a very spontaneous manner. This spontaneity was experienced by the students who said that whilst playing games they

“were more relaxed...felt no pressure and no stress” (SOP 36, Dorinda’s 3rd year Somatology Focus group, July 2009, 3:40 – 3:53mins).

“made me think on my toes, feelings of edginess” (SOP 35, Dorinda’s 3rd year Somatology student 3-1, July 2009)

Dorinda shared that the game playing is “more stimulating” (SOP 34, Dorinda, July 2009, 4:13 mins) as the students were creative and as they involved the physical body in playing the game. The students shared with very confident voices how listening to songs or watching movies helped them to remember more than when reading a book or sitting and studying

“If you watch a movie you can go and easily tell the next person what happens in a movie whereas if you have to read a book or like sit and study it doesn’t always sink in as fast as with a game cause there is no visual it’s just a lot of words that make you confused it’s not just words on a piece of paper it’s the fact that you actually getting involved and you become part of it” (SOP 36, Dorinda’s 3rd year Somatology Focus group, July 2009, 4:45- 5:28 mins).

When the students use the words “its just a lot of words that make you confused” , they are ex-pressing unhappiness about what Jousse calls verbigeration.

If we are to build up the capacity of the learner, we need to let the learner be by letting the learner handle the Real as much as possible: to build up mimemes, which mimemes, when act-ivated, become gestes. The danger is that gestes, actions, mimemes, can be verbalised: the replay then is expressed in propositions, in propositional gestes or, after the introduction of writing, in words. If these words no longer have rapport with a prior intussusception of the Real, then we have verbigeration. One should never

speak of things that have not been personally intussuscepted. And all too often the child is educated in words, through words, by words (Jousse 2005:17).

Furthermore, Jousse reminds us that

The human is a natural born mimier: the human being intussuscepts – takes in and – making it his own – integrates it, and then expresses those personalized and individual impressions (Jousse 2005:45) (...) and it is through mimism that s/he acquires all her/his knowledge (Jousse 2005:52).

The students went on further to explain in fast excited voices, all speaking at one time, how games helped them to connect their knowledge and see things as a whole and

“not just different numbered pages (...) not just scattered words (...) mumbled words (...) and easier words like us to use on a everyday basis (...) some words we learn (...) putting into laymans terms (...) talking to each other (...) we both know what that word means” (SOP 36, Dorinda’s 3rd year Somatology Focus group, July 2009, 5:44 -6:09 mins).

They stated how games helped them to be able to explain to others what they have read and understood (Boyer 1990). This led students to be able to

“remember the information in the future” (SOP 35, Dorinda’s 3rd year Somatology student 3-21, July 2009)

“makes understanding easier” (SOP 35, Dorinda’s 3rd year Somatology student 3-2, July 2009)

Dorinda’ students engaged in *whole-being-learning* as they designed and played the games in the class. Dorinda connected with them as they all became learners and teachers in the class. The students were able to connect with their subject material as they developed questions for the games and as they interacted with other students in answering the questions. The students as the questioning ones integrate their knowledge and become the knowing ones able to recognise the gifts and talents in themselves and in each other as they engage in *whole-being-learning*. the students and Dorinda experienced a love-filled joy and a joy-filled love in the design and playing of the games.

How did Anisa use games in her classroom to influence her students whole-being-learning?

Anisa and I first met at one of my workshops in 2003 on *Using Games for promoting Active learning*. Anisa was teaching a subject Tooth Morphology in the National Diploma:Dental Technology at the Durban University of Technology. During the workshop, I provided an opportunity for Sherlien to share how she had developed and used games in her classroom. Anisa listened attentively and after the workshop, she expressed a desire to work with me in the ELC to design a board game for her students. Anisa was excited about using games for *whole-being-learning* as she recalls with excitement in her tone of voice how she played games to learn her Islamic faith as a child. During a conversation with Anisa, she shared with passion in her voice that she “always wanted to teach differently...to **challenge** myself” (SOP 34, Anisa, June 2009, 1:00 mins). Anisa spoke very passionately with shining eyes (Zander 2009), and lots of movement of her hands about her students and her work and she wanted to develop the same passion for Tooth Morphology in her students.

She believed that to get them to feel the passion

“she had to learn to talk the students language (...) learn about her students (...) their personality, their enjoyment, a very social learning (...) tap into their thinking” (SOP 34, Anisa, June 2009, 13:01- 13:31mins (SOP 34, Anisa, June 2009,)).

Anisa had observed over the years of teaching that her way of conducting tutorials for her students needed to be refined as her students were not engaging in *whole-being-learning*. Her students were “passive observers of facts for only a short time period until the tests are written” (Vahed 2008:467) and they preferred “visualisation rather than abstract theory (...) they couldn’t retain the knowledge or apply it TMpractically” (SOP 34, Anisa, June 2009,1:35 – 1:46mins). The students were required to memorise certain terms which would inform the practical component of their course. Students studying Dental Technology qualify as Dental Technicians. Their job is very practically oriented as they design and make dentures and dental prostheses. Their reality as technicians is very concrete thus they find it difficult to engage with “voluminous content (...) and abstract theory” (Vahed 2008:467-468).

Anisa and I worked together in the ELC to develop a plan of action for her to design, develop and implement the game with her learners. I assisted her with the development of the cards she used in her Trivial Pursuit™ type of game. She used the computers in the ELC to type the multiple choice questions and answers for each category that she chose onto cards and to find appropriate pictures for the cards. A key aspect of the game was to include a full mouth maxillary model made of dental stone. The model, a familiar object to the students, consists of two parts, that is removable 'tooth-like' dyes and a solid base. The purpose of the model is for the students, if they answered correctly, to return the numbered dye correctly to the base. The team that returned all the dyes to the base is the winner. Apart from the model introducing a 'fun' element' to the game, the academic purpose of the model was to link the theory to the practice.

As the students played the game they would build the model with the correct teeth in the correct place which was a key competency for the Tooth Morphology course. During my interaction with Anisa, we questioned each other about the various components of the game and purpose of the game. We nurtured each other and recognised the gifts and talents that each had to contribute. I provided a safe space and community of practice for her in the ELC and through our interaction.

I recall how we had many moments of great laughter and excitement when everything was on track and progressing according to plan. There were also moments of distress when the cards and board game 'was not looking right' as the game needed to be "visually stimulating" with the relevant and appropriate morphological content. (Vahed 2008:468). We had frustrating moments too when we could not get the computer to do what we wanted or thought it should do. Finally, everything was completed within a six month period. We had both engaged in *whole-being-learning* as we had integrated our knowledge, nurtured our relationship and recognised each other's gifts and talents.

Anisa had discovered her creativity which she believed was dormant until she started getting involved in game design. She understands her creativity as being "your own idea developing" (SOP 34, Anisa, June 2009,15:33 mins). I observed Anisa sharing with energy-filled voice and movements of her hands and whole body as she shared how her ideas

“poured in and that was the best part, it wasn’t that I was standing there and waiting for ideas (pause) my mind felt like an explosion! (hands moving back and forth and touching her head and all around her body as she was seated) Ideas coming out from all over and my years of experiences are coming to light you know what were the difficulties? and how can I help? How can I make Anatomy another interesting subject?” (SOP 34, Anisa, June 2009,18:36 mins)

I believe that Anisa was integrating her knowledge of games based learning by exploring how she could draw on her past experiences to, in the words of Dewey, “live fruitfully and creatively in subsequent experiences” (Dewey 1938). I believe Anisa became aware of what Jousse refers to as “anthropological potentialities” (Jousse 2004:19). I believe that Anisa showing how deeply embodied and embedded her knowledge was in her viscera and was then able to spontaneously ex-press the gestes that were intussuscepted deep in her viscera and re-play them using both corporeal-manual and laryngo-buccal forms of expression (Jousse 2000). Anisa found her ‘*Element*’ in designing and using games for *whole-being-learning* (Robinson and Aronica 2009).

Anisa developed a computer-based game called *Muscle Mania* in 2007 for her Oral Anatomy students and is currently exploring an online game for her students.

Did the students see themselves in the same way as Anisa experienced them in the class- engaged in *whole-being-learning*? Anisa observed her students enjoying playing games and engaging in learning in a spontaneous manner. She shared that this gave her “...most exhilarating feeling (...) there are no words (...) the most exciting beautiful feeling ever”. (SOP 26, Academic staff - Anisa, September 2009, 4:21 – 4:45mins). Anisa had experienced the activation of her “molecules of emotion” and was “feeling good” (Pert 1999; Pert 2006).

Anisa’s students questioned her about her games “ Miss Vahed, why don’t I do this in the game?” and she realised that she was an expert in Dental, but they were experts in Gaming. She acknowledged the role reversal in that the learners became the teachers, and vice versa. She emphatically and deliberately repeated the comment when she truly realised “that was good, that was good” (SOP 34, Anisa, June 2009,13:57 mins). She felt good about her students having a voice in her class and for them integrating their own knowledge into the course. She felt good as the community of practice in her class was characterised by “involvement, mutuality and

accountability” (Palmer 1993:9). The students became curious about the game and contributed their knowledge to the improvement of the game – they were engaged in *whole-being-learning*.

I asked three groups of Anisa’s students- 2nd, 3rd and 4th year students who had played the game – “*What would you like to tell me about your experience – your feelings and emotions- of using games for learning, teaching and assessment?*”

The students share the change in emotions they experienced in their lives through the games that they played in Anisa’s class:

“In my first year of study the work was a lot and very confusing...difficult to study and understand... the game made us interested in the work...helped me understand... makes learning interesting and fun.. helped me pass the subject” (SOP 38, Anisa’s 2nd year Dental Tech student 2-14, June 2009).

“In my first year of study I found myself hating campus as I tried(sic) to adjust to something I didn’t know. I began to find myself having high stress levels...after playing the game...helped me a lot with understanding and enjoying two subjects that are so hard” (SOP 39, Anisa’s 3rd year Dental Tech student 3-14, June 2009).

“It was hard to adapt to the learning and teaching styles presented by the lecturers...very comforting, understanding and precise when the games were used for different subjects and a marked improvement in results were noted” (SOP 40, Anisa’s 4th year Dental Tech student 4-2, June 2009).

They were “confused”, “stressed”, “hated campus” and did not feel very comfortable as first year students. I found it interesting that these students were in their second, third and fourth years, yet they could recall the feelings they had in their first year at University which was traumatic. The impact of the games must have been very positive for them to be able to recall the change in their emotional lives.

All the students experienced “fun” whilst playing the games which means they enjoyed playing the games (Pert 1999). They no longer felt passive in their learning as they

“could hear someone else explain the topics in a way s/he understood” (SOP 40, Anisa’s 4th year Dental Tech student 4-4, June 2009).

“not bored and improve spirit of studying” (SOP 39, Anisa’s 3rd year Dental Tech student 3-7, June 2009).

“have fun rather than to stare at a lecturer for hours” (SOP 38, Anisa’s 2nd year Dental Tech student 2-14, June 2009).

The students were engaging in active *whole-being-learning* as they interacted with the subject and each other and found it pleasurable. Through the games, Anisa had helped the learners develop a relationship with the subject as well as with other students as one of them shared

“[games] made it easier to understand work because we were interacting with our class mates (...) gain insight on their thoughts (...) their understanding of different sections” (SOP 38, Anisa’s 2nd year Dental Tech student 2-04, June 2009). The students were able to understand the content and experienced an increase in ability to

“recall what they had studied (SOP 38, Anisa’s 2nd year Dental Tech student 2-20, June 2009).

“never forget the answers to the questions in the game” (SOP 39, Anisa’s 3rd year Dental Tech student 3-6, June 2009).

“absorb and retain and later recall knowledge” (SOP 40, Anisa’s 4th year Dental Tech student 4-6, June 2009).

Anisa had been able to address her concern about them not being able to retain their knowledge. The students had engaged in *whole-being-learning* as they played the games for learning.

I accompanied Anisa to the 2nd *European Conference on Games-based Learning* hosted in Barcelona during October 2008 where her presentation entitled *The Tooth Morphology Board Game: An Innovative Strategy in Tutoring Dental Technology Learners in Combating Rote Learning (Vahed 2008)* was well received.

Anisa has also registered for a doctoral study based on her use of games for learning. Anisa has thus offered her knowledge as a gift to herself and others (Huxtable 2009). I believe that the ‘safe space’ within the community of practice of games based learning practitioners that I had created was influential in the increased creativity and transformation that Anisa experienced as she engaged in *whole-being-*

learning. When she applied for the National HELTASA Teaching Excellence Award in 2009, I was able to write a testimonial for Anisa, highlighting her enthusiasm and commitment to innovative teaching. Anisa was the first teacher from the Durban University of Technology to receive the National HELTASA Teaching Excellence Award in 2009.

After writing this story, I sent an email to Anisa on 18 September 2012 for comments: “Please tell me what you think about what I have written about you, and me.” I received a response from Anisa on 18 September 2012:

Hi Delysia,

I thought I would just take a brief look, but when you described the sparkle in my eye I just could not stop myself. I have read my section and made some minor corrections. Let me know if you can access my brief comments.

All of the best.

Cheers,

Anisa

Anisa’s minor corrections were about the terminology I had used for her course. I have included her corrections.

Conclusion

Sherlien and Ingrid have provided evidence as well for teachers that are in a state of despair as they did not believe in themselves as good teachers. However as a result of the ‘safe space’ and community of practice that was provided for them, they were no longer in a state of despair and their students were engaging in *whole-being-learning*.

Ivan and Dorinda's students were not actively engaging as they found the course to be boring. Ivan and Dorinda changed the way in which they were teaching the course by setting assignments for the students to work in groups to design, develop and play games. Derrick's students were not integrating the knowledge of their subjects and like Anisa's students, they were unable to retain knowledge or apply it in their courses. Derrick started by designing his own board game for the students to use and then later set assignments for the students to design, develop and play board games. Anisa designed board games and later developed a computer game for her students to play as part of their tutorial program. Sherlien, Ingrid, Ivan, Dorinda, Derrick and Anisa's students engaged in *whole-being-learning*.

All four of the lecturers were influenced to use games after they attended workshops or interacted with staff who had attended workshops on using games to promote active learning. I had supported the staff, and in Ivan's and Derrick's case, their students by providing a safe space for them to engage in a community of practice.

The lecturers were influenced to care about their students' needs and serve them by accepting them for who they are, empathising with them and allowing them to grow taller than they would otherwise be (Greenleaf, R 1977). They were able to engage in a different mode of delivering the course and their classes were transformed.

The students engaged in *whole-being-learning* in their classes as their emotions of fear, boredom, and lack of excitement were changed to joy and fun (Pert 1999; Pert 2006). The students were able to remember, recall and engage in discussions and debates as they integrated their knowledge and were able to pose questions to the lecturers and to their fellow classmates (Dewey 1938; Boyer 1990; Nosich 2005). Both the lecturers and the students that designed and developed games had come to know the person they are and want to be; recognised and developed their talents to create and offer valued knowledge as gifts to improve their own lives and the lives of others (Huxtable 2009).

The 'real pain' that was experienced by the teachers and students has been changed to a 'real joy'

We all have a 'real joy'-

Finding answers to questions of things unknown
We have a 'real joy'-
Using our talents and offering our gifts of knowledge
We have a 'real joy'-
Caring deeply for each other and our knowledge
We have a 'real joy'-
Living as a valued one in community
We have a 'real joy'-
An energised spirit, mind and body
We have a 'real joy'-
Felt deep within our whole beings
We have a 'real joy'-
Felt through our molecules of emotion
As we live, we learn and we love.
Delysia Timm (2012)

Chapter 8:

How have I shared my study of my understanding of learning as a biochemical process in the public space?

Introduction

In this chapter I provide a chronological account, over the past decade from 2002 until 2012, of how I have shared my understanding of learning as a biochemical process in various public spaces.

When did I start making my voice public?

I began sharing aspects of my study in local and international public spaces since 2002 as a way of holding myself responsible for what I am doing (McNiff 2010). Sometimes I did this alone, but mostly I collaborated with critical friends in the construction of posters and in the sharing of presentations at conferences about our lived experiences of using games for active learning and engaging in whole being learning, out of which emerged my understanding of learning as a biochemical process. In this chapter I will give an account of some of the presentations and conversations I had in public spaces about the development of my thesis.

During 2002, I collaborated with three colleagues, Shubnam, Nalini and Penny in the design of a poster about the board game, *Chemistry is a Gas* that we had developed for students studying a National Diploma: Analytical Chemistry. We developed this game to promote active learning in Penny's Organic Chemistry class. Our abstract was accepted at the Annual Conference of the Royal Australian Chemical Institute (RACI) in Melbourne, Australia. I have included the abstract below and a picture of the poster. We were all very excited about the achievement. Only one person could attend the conference from the team. We chose Shubnam as she had been the most enthusiastic and showed the greatest commitment during the design of the game and the poster. Our abstract read as follows:

"CHEMISTRY IS A GAS" BOARD GAME"

Delysia Timm, Nalini Chitanand, Shubnam Rambharos, Penny Govender

Effective Learning Centre (timmdn@dit.ac.za)

Educational Development

Department of Chemistry

ML Sultan Campus

Durban Institute of Technology

Attendance and participation at tutorial sessions is a challenge facing Chemistry lecturers at the Durban Institute of Technology thus, the "Chemistry is a Gas" Board Game was developed. This game also serves to enhance independent and peer collaborative learning during tutorial sessions.

Ideas from a well known board game were adapted for the Chemistry Board Game. A pilot study of the game played by first year Analytical Chemistry students indicated that the game made learning fun, enabled them to learn important chemistry concepts and could be used for test and exam revision. This poster discusses the theory underpinning the development [1,2], the technical aspects and the pilot of the board game.


[1] M. H. Towns, K. Kreke and A. Fields, *J. Chem. Educ.*, 2000,77, 1

[2] R. J. Hinde and J. Kovac, *J. Chem. Educ.*, 2001, 78, 1


CHEMISTRY IS A GAS BOARD GAME

Shubnam Rambharos¹, Penny Govender², Delysia Timm³ and Nailni Chitanand⁴


¹Dept of Educational Development
²Department of Chemistry
³Effective Learning Centre
 Durban Institute of Technology, M.L. Sultan Campus, P. O. Box 1334, Durban, 4000, South Africa



DIT
DURBAN INSTITUTE OF TECHNOLOGY



elco



USAID
USAID/EDP
USAID/EDP

1. ABSTRACT

Attendance and participation at tutorial sessions is a challenge facing Chemistry lecturers at the Durban Institute of Technology thus, the "Chemistry is a Gas" Board Game was developed. This game serves to enhance independent and peer collaborative learning during tutorial sessions. Ideas from a well known board game were adapted for the Chemistry Board Game. A pilot study of the game played by first year Analytical Chemistry students indicated that the game made learning fun, enabled them to learn important chemistry concepts and could be used for test and exam revision. This poster discusses the theory underpinning the development, the technical aspects and the pilot of the game.

2. INTRODUCTION

Penny Govender (Lecturer, Chemistry 1) noticed that learners were almost totally dependent on her input during lectures and tutorials. Learners showed very little initiative or motivation during lectures and tutorials. Learning was a task/obligation for them. Learners who attended tutorials indicated that the activities were helpful but the tutorials were still poorly attended. Very few learners made any attempts to complete the tutorial exercises and they wanted more interesting and exciting activities to be incorporated into tutorials.

To provide a richer and more satisfying learning environment, active and co-operative learning methods (1, 2, 3) were explored. Small group learning was used since it was found to be effective in promoting achievement, cultivating positive attitudes toward learning, and increasing persistence and retention (4).

Therefore, in order to encourage active and peer collaborative learning and to further motivate learners, Penny, together with Educational Development staff (Shubnam Rambharos and Nailni Chitanand) and the Co-ordinator of the ELC (Delysia Timm), developed the game "Chemistry is a Gas" (based on a popular board game) for use in Chemistry 1.


The game was designed to promote:

- ✓ Interactive learning in lectures and tutorials
- ✓ Self study
- ✓ Independent learning
- ✓ Group work and peer collaborative learning as well as some competitiveness

3. TECHNICAL ASPECTS


From conceptualization of the game to the actual physical product required approximately 2 months and involved:

- ✓ Deciding on how the game was going to be played: As soon as we decided on the framework for the game, we gathered together the playing beads, the board and the cards. The playing beads helped us to devise the name of the game, "Chemistry is a Gas", which dictated the selection of an appropriate theme picture.
- ✓ Developing the playing cards:




Categories for the questions were selected and their colours, which correspond to coloured blocks on the board, were chosen. The questions were then developed (10 for each category) and were typed (with answers) into a card format using Microsoft Publisher.

Figures 1 & 2: Front and back face of the card
- ✓ Designing the board:



The board was a rectangle with colour-coded squares that represented the categories from which the players have to answer questions. Appropriate clipart graphics which were representative of the categories were also inserted into the squares. The board was developed using Microsoft PowerPoint.

Figure 3: The "Chemistry is a Gas" Board
- ✓ Devising the rules:



The rules were developed and typed in a three-fold brochure format and elaborated on the playing tools, the number of players required, how to start, play and win the game. Microsoft Publisher was used for the rules.

Figure 4: Rules for "Chemistry is a Gas" Board Game
- ✓ Printing and laminating the board and the cards.
- ✓ Compiling the set


4. ASSESSMENT/EVALUATION

We haven't linked the game to assessment – it's just being used as an alternative method of learning to motivate and stimulate learners to become more independent and responsible.

The game was piloted with Chemistry learners and staff and Environmental Health learners. The purpose of the evaluations was to elicit responses from the students regarding the effect of the game on their learning and suggestions for improvement of the game.

The evaluation tools used were:


- ✓ **Questionnaire** - which included three qualitative questions and sixteen statements that learners had to rate on a five point Likert scale of "Strongly disagree" to "Strongly agree". Some examples of these statements are: "The language used was easy to understand", "The material contained examples from daily life", "The use of the materials encouraged me to participate more in class".
- ✓ **Group discussions** - discussion was generated from questions/statements similar to those in the questionnaire.



LEARNER RESPONSES

- ✓ Made learning fun
- ✓ Challenging
- ✓ Assisted with revision of work done early in the year
- ✓ Encouraged participation in class


Figures 5 & 6: Analytical Chemistry 1 learners playing the "Chemistry is a Gas" Board Game.



LEARNER RESPONSES ...

- ✓ Improved general knowledge
- ✓ Develop similar game for other subjects
- ✓ Rules - limit number of times a player can answer correctly
- ✓ Add more clues

Figure 7: Penny Govender with learners playing the "Chemistry is a Gas" Board Game.



LEARNER RESPONSES ...

- ✓ Add more cards - longer game
- ✓ One question per card
- ✓ Include multiple choice questions
- ✓ Helped to learn difficult concepts

Figure 7: Penny Govender with learners playing the "Chemistry is a Gas" Board Game.

STAFF RESPONSES:

- ✓ Fun game - stimulates learners to participate in the class
- ✓ BUT
- ✓ Rephrase particular questions
- ✓ Restrict questions to single or short answers
- ✓ Rate questions in levels of difficulty
- ✓ Include multiple choice questions
- ✓ Revise rules to prevent one player dominating, e.g. Roll >4 or 6 or answer question of higher difficulty level

5. FURTHER WORK

- ✓ Ongoing identification of learner misconceptions
- ✓ Revising questions based on learner and staff responses in pilot
- ✓ Increasing number of questions and categories
- ✓ Adopting framework of development to other sub-disciplines
- ✓ Marketing

6. REFERENCES

1. Hinde, R. J. And Kovas, J., J. Chem. Educ., 2001, 78, 93.
2. Towns, M. H., Kreke, K. And Fields, A., J. Chem. Educ., 2000, 77, 2.
3. Grasha, A. F., College Teaching, 87567555, Summer 2002, 50, 62.

ACKNOWLEDGEMENTS

The authors wish to express their gratitude to the staff of the ELC and the Audio Visual and Media Department of the M.L. Sultan Campus of the Durban Institute of Technology (DIT) for their assistance. Financial Support received from TELP/USAID and DIT is gratefully acknowledged.

Unfortunately, we were unable to get the game patented. I was deeply saddened that when Shubnam and Penny left the Chemistry Department, no other lecturer in the Chemistry Department was interested in pursuing the use of the games for learning. During a conversation with Shubnam in June 2009, she spoke with deep sadness and longing about how the lecturers in Australia in 2009 were more

interested in the game “Chemistry is a GAS!” than the lecturers in our own institution. I ask myself “Is this a case of the prophet not being heard in her own land?” I think so.

In November 2004, I presented a paper at the South African Academic Development Association (SAADA) annual conference in Port Elizabeth, South Africa. The annual conference was attended by Academic Developers as well as lecturers and tutors who were interested in improving their teaching, and their students’ learning. The title of my presentation was **Educators, Learners and the Critical Crossfield Outcomes: Who Learns What from Who, When, Where and How?** My abstract for the paper read:

The SAQA Critical Cross Field Outcomes and Underlying Principles (CCFO’s and UP’s) were among the first post-apartheid statutes and arguably the most important. If these are met, learners are truly empowered by the realization of their innate capacity and education is truly transformed. Spady (2004) points out that the CCFO’s and UP’s reflect qualities and competences that are the essence of quality living and are not bound by specific subject content. These outcomes can be translated easily into role performances which enrich “the quality of the student’s experience as a preparation for life”.

This paper presents two cases highlighting educator and learner engagement with the CCFO’s and UP’s in the design and implementation of innovative learning materials at a University of Technology. The processes undertaken by the educators and learners involved and the issues arising from the various approaches to operationalising the CCFO’s and UP’s in a Higher Education Environment are discussed.

At this stage in my inquiry, I was trying to ascertain the acceptability of games as a learning strategy in Higher Education. In my presentation, I discussed the development of games as innovative learning materials. I shared how the lecturers were using the games in their classrooms to promote active learning. I was very excited to present my work at the conference. I was even more excited when the people who attended the conference showed an interest in the games that we had developed. During informal discussions after the presentation, I shared the fun and excitement in the classrooms and how the students were engaging in learning.

In 2002, when my friend, mentor and supervisor, Joan Conolly, saw what we were doing with games for learning, she introduced me to the *Molecules of Emotion*, by the biophysicist, Candace Pert, who tells us that human beings are “hardwired for pleasure” (Pert 1999), and to the ‘memory of water’ work of Jacques Benveniste (Benveniste 1999), which tells us that memory operates when subtly energised and activated.

Since 2002, Joan and I have been debating and discussing repeatedly the possibility, and increasingly the opinion, that human learning has biochemical origins, particularly because she and I came from opposite sides of the ‘great academic divide’ – she from arts, specifically drama and orality-literacy studies and I from science, specifically chemistry.

By November 2005, we were sufficiently confident to submit a joint paper at the annual South African Academic Development Association (SAADA) conference hosted in the Durban University of Technology, our university, in Durban, we titled **Exploring the nature and operation of learning as a biochemical process**. Our abstract was accepted and we co-presented at the conference. Our abstract was:

Given that effective teaching can only be measured as a consequence of effective learning, we need to understand the nature and operation of learning. Historically we are persuaded that learning is psychological, hence educational and cognitive psychology and multiple and emotional intelligences being cited as important factors in the learning and teaching interface. But the intuitive insights of Marcel Jousse based on three decades of the observation of the transmission of oral traditions indicate that learning is psycho-physiological and the product of learned experience lodged in memory. This insight is corroborated by the scientific findings of Candace Pert which indicate that memory and therefore learning is a biochemical process driven by emotion, and that in fact “Your Body is Your Subconscious Mind” (Pert 2000). This insight is further corroborated by Benveniste’s discovery that water has memory informed by the agitation of its subtle energy field, implying that human memory is lodged in the waters of the viscera. This paper explores the implication of these insights and argues for the biochemical nature of active learning thereby identifying what is essential to effective learning and teaching.

This was the first occasion on which I had spoken with my public voice directly to my understanding of learning as a biochemical process.

I was very nervous about this presentation, as I realised that by identifying learning as a biochemical process, we were challenging the current thinking about how learning happens. There were many questions about our ideas, some of which we could answer, and some which were beyond our understanding at that time.

I found this process exciting and encouraging. I was excited about the new journey of discovery I was embarking on and I was encouraged that we were able to stimulate peoples thinking about learning.

As a result of this event, I began to read extensively about the operation of human learning from a scientific perspective, in the areas of biology, chemistry, anatomy, physics and I became increasingly convinced that there was a link between human learning as a result of the fun of playing games and the biology of the human being. (Peterson 1984; Buffer 1985; Byrne 1986; Schandry *et al.* 1986; Sylwester, R 1986; Hendry and King 1994; Liston 1995; Mollica and Danesi 1995; Sylwester, Robert *et al.* 1995; Liston 1996; Caine and Caine 1998a; D'Arcangelo 1998; Haberlandt 1998; Rose and Fischer 1998; Wolfe, Pat and Brandt 1998; Brandt 1999; Gathercoal 1999; Greenleaf, RK 1999; Brandt 2000; Bransford *et al.* 2000; D'Arcangelo 2000; Jensen 2000; Saunders and Vawdrey 2002; Zull 2002; Lamon and Laferriere 2003; Adolfs 2004; Greg 2004; Elsbeth 2005; Michael and Andrew 2005; Cozolino and Sprokay 2006; Gloria *et al.* 2006; Ross 2006; Tye 2006; Zull 2006; Schulte-Korne *et al.* 2007; Jensen 2008).

What has happened in the past five years?

In 2007, I was a member of the Holistic Learning and Integrated Teaching and Assessment (HoLITA) project, which gave me the opportunity to attend off campus workshops in May and September. These workshops were attended by Visiting Scientists who were there to share their specialised expertise with the workshops participants. The Visiting Scientists included Edgard Sienaert, Paulus Gerdes, Emilia Afonso, and Alberto Cupane. I presented my work informally at these workshops and was encouraged yet again by the enthusiastic appreciation of the participants, and the visitors. Edgard Sienaert is the original translator of the work of Marcel Jousse into English, and was generous in sharing his encouraging opinion of my work from a

Joussean perspective. Paulus Gerdes is a leading international ethno-mathematician whose work demonstrates the relationship between mathematics and weaving crafts, and I saw echoes of what I was thinking about in his scholarship. Emilia and Alberto had both just completed their doctorates in chemistry and physics from an auto-ethnographic perspective with Peter Taylor in Australia, and their experiences further encouraged and informed my thinking.

By November, 2007, when I presented at the annual HELTASA¹⁸ (Higher Education Learning and Teaching Association of South Africa) conference in Bloemfontein, I had developed an understanding of how 'learning as a biochemical process' was informing 'learning from games'. The title of my presentation was **From designing games to understanding learning: what happens when we play?** I have included a copy of the powerpoint presentation in Appendix M.

I was excited by the large number of delegates who attended my presentation: there were even people sitting on the floor. There was a great interest in what I presented. People commented on how they could relate to what I was saying about how games can assist learning. They had observed how games had increased learning in their own children at home who still attended school. I was excited to discover that more and more higher education teachers were interested in trying to use games in their learning, teaching and assessing. I was asked to describe in more detail about why I thought games facilitated learning as effectively as they do. I was able to draw on the knowledge from the many discussions that Joan and I had had, our SAADA 2005 paper, and my reading around the subject (which reading had become extensive by then), and share my understanding of learning as a biochemical process, with scientific detail. For the first time, I believed that people were listening to the possibility that human bio-chemistry plays a role in human learning.

In 2008, I accompanied Anisa Vahed to the 2nd European Conference on Games Based Learning where she presented a paper on how she had used games for learning. During the discussions after her presentation, and at other presentations, I was able to share my knowledge and understanding of learning as a biochemical process. I was delighted when Anisa acknowledged my influence in her paper:

Acknowledgements:

¹⁸ In 2006, SAADA became HELTASA – Higher Education Learning and Teaching Association of South Africa.

The author would like to express her sincere gratitude to the person who was not only catalytic in motivating her to tread the path of game based teaching but challenged her educational philosophies, Mrs Delysia Timm, without whom this game would have not been possible.

I had “challenged [Anisa’s] educational philosophy” by questioning her on the relationships between herself as the teacher and her learners in the classroom, promoting learning as a fun experience and by getting her to focus on the learning process. In challenging Anisa in this way, I believe I contributed to her learning about learning and teaching, which resulted in her receiving the HELTASA Excellent Teaching Award in 2009. I also note, with some degree of wry humour, that I had not in 2009, yet, influenced Anisa to speak about herself as “I” in her research, even though this was becoming part of my research identity at that time, through the influence of Krishnamurti (1953), Whitehead (1999), Jousse (2000), and Taylor (2007).

In July, 2008 Peter Taylor came to DUT to present a series of workshops on auto-ethnography, which were again encouraging. Also in 2008, HoLITA became Self-Study for Transformative Higher Education Studies (SeStuTHE), which in 2009 brought 22 (inter)national self-study associated scholars to DUT, including Diane Hill (Canada), Claudia Mitchell (Canada), Lebo Moletsane (SA), Kathleen Pithouse (SA), Mathabo Khau (Lesotho), Peter Taylor (Australia), Lily Settelmaier (Australia), Emilia Afonso (Mozambique), Paulus Gerdes (Mozambique), Alberto Cupane (Mozambique), Jack Whitehead (UK), and Joan Whitehead (UK).

By the end of 2009, ‘Self-Study for Transformative Higher Education Studies’ had become ‘Self-Study for Transformative Higher Education Studies and Social Action’ (SeStuTHESA). By the end of 2009, I had the opportunity to interact with and talk informally about what I was doing with all of the above-mentioned generous (inter)national self-study scholars. I experienced encouragement from them all, together with critique which was most helpful.

As early as April 2009, I was able, albeit apprehensively, to present **Challenges of Structure, Environment and Process facing a part-time doctoral student in a**

new UoT: a critical autobiographical view, at the second biennial International Post-Graduate Supervision Conference in Stellenbosch. I was apprehensive about discussing my autobiography/ autoethnography because this was the first time I was going to be talking about myself, in a formal public forum, as ‘object and subject of my research’, following Jousse (2000:26/27).

The only person one can know well, is oneself. But to know oneself well, one must observe oneself thoroughly. (...) The true Laboratory is therefore the Laboratory of the self. *To instruct oneself is to develop oneself.*

When the time came, I found myself confident, and excited because it was so well received. This was the first of my two papers relating to my autobiography. I include a copy of my powerpoint presentation in Appendix N.

In November 2009, I presented at the annual HELTASA conference in Johannesburg, the theme of which was “Risk and Resilience in Higher Education”. My title was **The Risk of Being Oneself in Higher Education** and my abstract read

All higher education learners should be self-directed, autonomous learners who are able to solve problems and think critically. In becoming a self-directed learner there is a risk of losing the self as a complete entity that exists in a whole and integrated state (Jousse, 2000, Krishnamurti, 1953) and moving towards a disintegrated, non-holistic being. Application of the principles of holism (Smuts, 1925) to the education process can help provide an holistic experience ensuring that learners are resilient and ready for the world of work.

Using self-study as transformative scholarship (Jousse, 2000, 2004; Taylor, 2007; Whitehead, 1999, inter alia) I will weave memories of my own as well as those of other educators and learners in Higher Education to seek an answer to “Who is the self in the self-directed learning?”

This paper examines what it means for the learner to be resilient as an individual whole, interacting in a dynamic and organic manner whilst constantly maintaining an holistic state. The balance and rhythm of learning in the whole life of the learner needs to be identified and acknowledged by being included in curricula in a manner that they do not risk losing who they are in their society, in the higher education environment and in the workplace in which they engage.

I will argue that the self cannot survive alone and it is more a notion of 'self and others' and the relationship between them that makes for a successful learner who is able to function in the world outside of the formal academic institution.

My focus in this presentation was on my critical reflective study of my personal learning. Once again, I was apprehensive about sharing my own story, but I found that I experienced joy in the public sharing. I recall how one of my colleagues in the audience commented that my presentation had really challenged his thinking about his learners in his own classroom. He believed that my presentation had moved him to act with more compassion towards his learners. Another member of the audience commented on the strong emotion that he too experienced during my presentation. Jack Whitehead video-recorded my presentation and uploaded it onto Youtube. He expressed how he could feel my dynamic expression of energy as I shared my story. The video clip can be viewed on Youtube by clicking on the hyperlink below or it may be viewed on the DVD. <https://www.youtube.com/watch?v=Ei7w9F4a1xw>

Jack also video-recorded a conversation that Joan, my supervisor and I had with him about my research (SOP 42, Jack, Joan and Delysia). This conversation was conducted at the end of a two-day workshop Jack had facilitated with academics on the use of living theory methodology in researching the "self". As I view the videoclip, I notice the life-affirming energy between Joan and me during our conversation which Jack had noticed (Whitehead 2010b). I notice the nurturing relationship between us and the recognition of each other's talents and gifts. I realize now how we were both engaging in *whole-being-learning*. I had not previously thought about our teacher-student relationship and the conversation we had was very important for me as it raised into consciousness my own position yet again as a learner in higher education. The video-clips are accessible on You tube at <http://www.youtube.com/watch?v=O2uTcxZtYcw> as well as on the enclosed DVD.

In July 2010, I presented a paper at our Self-Study for Transformative Higher Education and Social Action (SeStuTHESA) Seminar at the Durban University of Technology. My presentation was one of twenty-one presentations on self-study research. My title was **Towards an Understanding of the Biochemical Nature of Learning** and my abstract read:

Transformation of learning and teaching is influenced amongst other things, by our own beliefs, values and skills. Our belief of learning is very often limited to processes occurring in the brain and does not take into account the kind of activity that makes learning happen in the whole being. Historically and currently, theories of learning espouse the notion of learning as a process of change. Change as an understanding of learning is demonstrated as behavioural change as a result of experience. The locus of learning is stimuli in external environment, internal cognitive structuring, affective and cognitive needs, and the relationship between people and environment. Sensory stimulation theory supports the notion that for greater learning to take place, multi-senses need to be stimulated. This theory does not provide the answer as to what is happening in the body when this stimulation occurs. My concern about the actual process of learning as a common experience for all prompted this study.

In this paper I explore an understanding of learning as a biochemical process within the whole human being - the mind and the body (Conolly and Timm 2005). I will provide evidence of the biological underpinnings of human awareness as it is expressed in our emotions, beliefs and expectations. Human awareness influences how we respond to, and experience our world, and how we learn. I argue that there must be something that is common to everyone as to how learning occurs, and that this is not fully socially or psychologically observable, but can only be usefully explored through understanding of biochemical operations.

I was the last presentation on the last day of the seminar. Even so, I had a very interested audience and my paper was well received. The video clip of my presentation is available on You tube at <http://youtu.be/Ei9QLqTsXWg>. When I reflect, I can see how confident I had become using the personal voice - the voice that speaks from "I" about "me" and "my" and "mine" and "myself" - not in a self-congratulatory way, but as the voice of the one who 'shows up', and 'speaks up' about what she values and believes. I began to realise that this was self-empowering in that my confidence was growing, but that this was also a power-filled way to share scholarly knowledge because it enabled me to speak with convincing passion from a deep seated place of my own beliefs and values.

I must note at this point, that my belief in what I was doing was challenged when this abstract was refused inclusion at an action research symposium at another

university. On reflection, I find it deeply ironical that my action research undertaken to suggest how 'action research' to establish the origins of the 'action' in 'active learning' can be refused inclusion at an action research conference. On further reflection, I decided that this was the 'way of the cosmos': my belief in my study needed to be challenged for me to think deeply about my commitment to my living theory about the knowledge that I was espousing. I am glad to say the living theory and the knowledge won, and undaunted by the exclusion of my work, I continued with my studies with renewed determination.

In April 2011, at the 3rd Biennial International Post-Graduate Supervision Conference organised by Stellenbosch University, I presented a paper entitled **How My Lived Experience of Multiple Responsibilities on a Doctoral Journey is being Transformed through Critical Reflective Self-Study**. The abstract read :

There is a need within the Universities of Technology to move into the domain of promoting doctoral study programmes as part of their transformation from Technikons to Universities. Furthermore, there is an added pressure for staff at these institutions to be awarded Masters and doctoral degrees so that staff meet the minimum academic requirements for employment. Hence, the students studying for these degrees are academic staff registered part-time within the same Institutions. The supervisors are also colleagues of the same students within the Institution with professional roles that have the potential for conflict since there is a small pool of possible supervisors available. There is a large student to supervisor ratio which also affects the nature of the supervision process and the educational influence of the supervisor. All of these factors make demands upon the supervision relationship which are idiosyncratic and challenging.

In this paper I will share my lived experiences as a part-time doctoral student at a University of Technology. I will draw on Jack Whitehead's living theories methodologies to reflect on the various educational influences on my doctoral journey of self-transformation (Whitehead, 2009). I will interrogate how my knowledges and hence my ways of knowing, being and becoming, together with my values are being transformed during the journey. I will also examine the role of life-enhancing energy during my learning and how this contributes significantly to my own transformation. I will also share how the apparently different and conflicting, multiple responsibilities that I have, actually inform and transform my study progress and success. These intersections have a significant impact on my learning as a doctoral student. In telling my story, I will generate my own living theory of spiritual resilience gained through connection with a loving dynamic energy as a standard of judgement (Walton, 2008).

In this presentation, I focused on how I was using living theory methodology in my study. I was pleased to see that there was one other person at the conference who also used a living theory methodology in her study. I was able to discuss with her my use of the living theory methodology and hear from her how she had used the same. I was excited that the living theory methodology I was using in my study was being used more widely. I was no longer apprehensive and nervous about presenting my work. I started feeling much more confident about my own knowledge and understanding of my study. AGE (*pronounced Aggy*) came to the fore, and JNGE (*pronounced Ginger*) retreated.

What is the most recent spaces where I made my voice public?

Recently, and I believe, significantly, I presented as part of a Self-Study Special Interest Group (S-SSIG) symposium at the American Educational Research Association (AERA) meeting held in April 2012 in Vancouver, Canada. The title of our group presentation at the symposium was : **“Starting With Ourselves”:** **Perspectives From the Transformative Education/al Studies Project,** and my particular presentation was **How Am I Transformed as a Higher Education Practitioner-Researcher through Self-Study?** My abstract read:

Higher Education in South Africa has, amongst its many challenges to deal with, the issue of poor undergraduate success and throughput among students from the previously disadvantaged communities as well as the subminimum academic staff qualifications (ASSAf, 2010; Scott, Yeld & Hendry, 2007). I identify with these issues both as a doctoral student from a previously disadvantaged community and as an academic staff member teaching at a University of Technology in South Africa.

I have found that the self-study approach to education/al research is appropriate in my Higher Education context since "knowing more about ourselves as teachers and teacher educators changes us, provokes growth, jolts us out of complacency – sometimes radically, in ways that can seem transformative...The very process of self-study itself changes its practitioners and their situations. Seeing things differently, self-study can prod us to take action" (Pithouse, Mitchell & Weber, 2009, p. 48). It is in changing myself and my situation during both my practice and my research that I believe I am contributing to the American Educational Research Association's mission to

“promote the use of research to improve education and serve the public good” (Ball & Tyson, 2011, p. 198), particularly in South Africa.

In this presentation, I will explore my lived experience as a Higher Education practitioner and part-time doctoral student, showing how my research as well as my practice have been transformed during my self-study research process. Whilst doing a self-study, I have examined my own values, beliefs, knowledges and hence ways of knowing, being and becoming as a practitioner-researcher in Higher Education to provide an account for my understanding of learning as a biochemical process. It is in systematically examining my practice through telling my own stories, the stories of those that I interact with as a professional academic developer and the use of multimedia that I have become more aware of the various educational influences on my practice.

Through the application of Marcel Jousse’s “Laws of the Anthropology of Geste and Rhythm” (Jousse, 2000), I discover how changes in my values and my beliefs are associated with biochemical changes occurring in my whole being as a result of intussusception. My new knowledge of myself, my educational influences as well as the educational influences of those I interact with during my doctoral study have transformed my practice both as a doctoral researcher and as a practitioner. This transformation has resulted in the generation of a living theory (Whitehead, 2008) that offers spiritual resilience gained through a connection with a loving dynamic energy as a standard of judgement.

I was excited to be talking about the process of self-study on a South African panel led by Kathleen Pithouse-Morgan, and including Theresa Chisanga, Daisy Pillay, and Wendy Rawlinson, all of whom are engaged as either students or supervisors of self-study as part of the Transformative Education/al Studies (TES) project funded by the South African National Research Foundation. Our seminar discussant was Jack Whitehead and our chairperson was Joan Whitehead. Jack video-recorded my presentation and uploaded it on Youtube it can be viewed at <http://www.youtube.com/watch?v=V48I2BB7Bj4>. As you view the video, you may observe my personal contributions from 4:23 – 7:04 mins and then later at 35:49 – 45:08 minutes. Kathleen Pithouse-Morgan has subsequently been appointed as secretary to the Self-Study Special Interest Group (S-SSIG) of AERA.

Our session was the first session on a Saturday morning, the second day of the meeting. There were hundreds of other presentations happening at the same time at

about eight different venues across the city. I was delighted that I was making my knowledge public amongst international researchers of self-study. I realized that my voice and what it was sharing was acknowledged and accepted. I realized yet again that I have evidence that what I am saying about my study is significant. Figure 48 is a photo that was taken after attending the Self-study SIG closed meeting session. My paper I prepared to present at the AERA S-SIG has been recorded in my thesis as the *Prologue*.



Figure 48 At the AERA Self-study SIG meeting. from l to r: Wendy Rawlinson (SA), Kathleen Pithouse-Morgan (SA), Delysia Timm (SA), Joan Whitehead (UK), Theresa Chisanga (SA), Jack Whitehead (UK), Daisy Pillay (SA), Jackie Delong (Canada), Lesley Coia (USA)

On 18 September 2012, I presented my research at the TES workshop at the Assagay Hotel. My presentation was entitled **What have I learnt about using an action research framework for my self-study doctorate?** I shared how and why I had adapted the action research framework of McNiff and Whitehead (McNiff and Whitehead 2006) and McNiff (McNiff 2010) in reporting my research I had undertaken. I was encouraged by the interactions of the audience, who were fellow self-study masters and doctoral students with their supervisors, during my presentation as well as in the conversations after the presentations. I believed that I was able to assist some students who were experiencing difficulties using the framework in their research. They believed that the framework had to be applied as a given by the authors. As I explained the process I had engaged with, they too understood how they could possibly adapt the framework.

After my presentation, I was asked why I had chosen to do a D Tech degree through Durban University of Technology (DUT) instead of a PhD at another university. I responded saying that I had chosen the D Tech at a university of technology, specifically DUT, rather than a PhD at a traditional research university, because the D Tech was a professional degree which encouraged me to research my practice, and that I had chosen DUT because it was at the DUT that I had explored my practice and my learning.

Mine will be one of the last six D Tech Education degrees to be awarded at DUT because the qualification is no longer being offered. I am very sad about this because even though we have developed a vibrant community of practice (Wenger *et al.* 2002) at DUT, which we have formed we will not have opportunity to promote new masters and doctorate studies in educational practice at our own university. We will however continue to pursue post-doctoral studies in our various practices.

The titles of our Unpublished D Tech Education studies within our community of practice are:

Examined and awarded:

1. Alethea (Snoeks) Desmond. 2010. A Journey in Family Literacy: Investigation into the Influences on the Development of an Approach to Family Literacy (Desmond 2010).
2. Jerome Thamsanqa Gumede. 2011. An Auto-Ethnographic Enquiry: Critical Reflection on the Influences in the Development of a Black African Male Educator (Gumede 2011).

Submitted for examination

Christina Nosabata Ngaloshe. 2012. Breaking the silence, addressing the confusion and challenging denial surrounding HIV and AIDS by engaging tradition: a study of the mnemonic oral style with special reference to Marcel Jousse (Ngaloshe 2012).

What are my reflections?

As I reflect on what I have written in this chapter, I am amazed at what I have achieved during the past decade and how it has actually been so closely aligned to my doctoral studies. During the planning of this study, I did not believe that it would be at all possible for me to have these opportunities to share my knowledge by making my voice public before I had actually completed writing my thesis. I was then of the opinion that the writing of the thesis would happen before the sharing of my knowledge at conferences, in public spaces. My supervisor Prof Joan Conolly played an important role in exposing and encouraging me to submit abstracts and attend the various conferences. I realise now that my learning was happening all the time as I was interacting with people through speaking in the public spaces. I experienced the various emotions that triggered my biochemistry, deep within my viscera. After each interaction in the public space, I believed more and more that I had knowledge to share with the wider community.

Conclusion

In this chapter I have shared how my understanding of learning as a biochemical process has been made public, been engaged, acknowledged and even accepted in both local and international public spaces. I have interacted with various practitioners and researchers engaging in and out of the field of self-study research. I have interacted with persons interested in improving their understanding and practice of learning teaching and assessment. I have been encouraged by the safe space in which these interactions have occurred where I have experienced a change from emotions of fear to joy as I engaged in *whole-being-learning* in the public spaces.

Chapter 9: Conclusion

What do I see as future explorations following on my study?

As a chemist, I believe that the chemical analysis of the changes or neuropeptide and receptor reactions and the growth of the myelin layer around the neurons through the myelination process, could be pursued in further work especially in order to gain other perspectives of the role of biochemical processes operating (during) human learning (Gershon 1998; Gershon 1999b; Pert 1999; Fields 2005; Leaf 2005; Lipton 2005; Fields 2008a; Fields 2008b; Pert 2008).

As a teacher and researcher in higher education, I believe that understanding the anthropology of learning, viz, the biochemistry which informs human psychology and human behaviour can contribute to greater motivation to improve learning, teaching and assessment processes, which can impact positively on success and throughput in higher education. I believe that learning in higher education needs to be exciting, pleasurable and self-rewarding and I believe that this is possible once the biochemical processes are taken into account.

I suggest the following questions for future exploration:

- How can neuropeptide and receptor identity and operation during learners' *whole-being-learning* be determined in a laboratory?
- What are the biochemical processes at work in commonly used medication, such as Ritalin, to "keep inattentive and impulsive students on the learning pathway" (Keane 2008)?
- How can policies in higher education accommodate, encourage and dignify fun and pleasure in learning, teaching and assessment strategies in higher education learning spaces?
- How and to what extent can academic developers and educators develop safe communities of practice within the higher education environment to promote *whole-being-learning*?

- How can higher education teachers be enabled to accommodate learning as a biochemical process in their teaching and assessment practices?
- How can teachers in higher education be enabled to recognise their learners' talents and gifts, and accommodate these talents and gifts in the design and delivery of the curricula?
- Most importantly - How can learning, teaching and assessment in higher education be pleasurable, delightful and self-rewarding?

What are my final reflections?

My study journey has been both emotionally and intellectually demanding and challenging, and rewarding. I have come to the conclusion that when 'we~i' experience positive emotions such as joy, fun and love during learning, 'our~my' biochemistry of learning is activated, and this kind of learning is more effective, not only because it is more enjoyable, but also because it results in learning which reflects beyond assessment.

When I reflect upon my doctoral journey, I have come to recognize what is anthropological about learning - what is common to all human beings about how they learn. I have come to realize the biochemical processes evident in human learning are even more significant than I have been able to demonstrate in this thesis. I believe that this is because learning at the biochemical level occurs deep within the viscera of all human beings, and exactly how that happens biochemically remains to be established.

My study started out by focusing on learning in the classrooms of a higher education institution, but I soon realized that my own learning and the learning of others throughout my life – from a personal, spiritual and educational perspective - was important and significant. I thus included, in my study of my personal learning and the learning of others, a focus from a spiritual perspective and through a spiritual lens. I then realized that my study is significant for teachers and learners not only in

education and specifically in university classrooms, but also in the teaching and learning of spirituality in our communities and society.

I have benefited greatly from my reflections. I realise that my reflection on my inner life, my beliefs and values with great curiosity, openness, acceptance and love has contributed to my own *whole-being-learning* (Siegel 2008). I have been delighted to realise the coherence between my ways of human knowing (epistemology), my ways of being human (ontology) and my human attitudes and values (axiology).

I discovered to my delight that the evidence which presented itself in my study appropriately answered the research questions which I asked, in keeping with ancient Zen wisdom, and with good teaching and research practice.

I have enjoyed showing how using my personal voice to share my ways of knowing, my ways of being and my values have made a contribution to self-study. I have had fun sharing how expression of my knowledge has benefited from the use of multimedia presentations.

I have been pleased to be able to demonstrate how *whole-being-learning* can be promoted in safe communities of practice. I have been delighted to be able to show that when relationships are nurtured with love-filled joy and joy-filled love, talents and gifts are recognised and knowledge can be integrated in emotionally-informed active learning exercises, such as game playing and game design.

As I have engaged in *whole-being-learning*, I began to recognise that I have a talent for asking probing questions, and that in answering these questions people become enlightened about themselves. These are the kinds of questions which open new ways of seeing themselves and seeing their learners' talents and gifts in safe and productive communities of practice.

It has given me pleasure to have demonstrated that people can be led to knowing more about themselves through relationships that nurture spirituality and creativity. I am excited to have found a new role for educators which can be used together with the “sage on the stage” (King 1993) and the “guide on the side” (King 1993), which is as a “designer of *whole-being-learning* opportunities” – “an architect of *whole-being-learning*”.

I feel privileged to have had the opportunity to bring my embodied holistic knowledge to the academy as an original contribution to knowledge. For me learning is a dance that connects me to who I am completely as well as to other human beings and the subject content. I internalise the energy, words and music I receive, through interactions with the universe and others. I am then able to register and replay the expressions in movement or activation of my whole being – mind, body and soul as I engage in *whole-being-learning*. All of this fills me with delight and gratitude.

I discovered the extent to which I value educational and spiritual practice that expresses a joy-filled love and a love-filled joy. I offer this joy-filled love and a love-filled joy as an explanation for my educational influence, my living educational and living spiritual theory. I believe that, through my study, I have offered educators LOAVES of life-giving bread. From a spiritual and educational perspective within a safe community, I have given a Love Offering, an Available Voice and Energetic Service, in the hope that every teacher will find a way to fulfil the maxim ...

*Let the main object of this,
our didactic,
be as follows:
To seek and find a method
by which teachers may teach less,
but learners learn more
John Amos Comenius*

BIBLIOGRAPHY

- Abbott, L. F. and Wade, G. R. 2004. Synaptic computation. *Nature*, 431 (7010): 796.
- Ablin, J. L. 2008. Learning as Problem Design versus Problem Solving: Making the Connection between Cognitive Neuroscience Research and Educational Practice. *Mind, Brain, and Education*, 2 (2): 52-54.
- Ackermann, D. 1991. Being Woman, Being Human. In: Ackermann, D., Draper, J. and Mashinini, E. eds. *Women Hold Up half the Sky: Women in the Church in Southern Africa*. Pietermaritzburg: Cluster Publications.
- Ackermann, D., Draper, J. and Mashinini, E. eds. 1991. *Women Hold up Half the Sky: Women in the Church in Southern Africa*. Pietermaritzburg: Cluster Publications.
- Adolfs, R. 2004. Processing of emotional and social information by the human amygdala. In: Gazzaniga, M. S. ed. *The Cognitive Neurosciences III*. Cambridge, MA: The Bradford Press.
- Afonso, E. Z. F. 2007. Developing a Culturally Inclusive Philosophy of Science Teacher Education in Mozambique. PhD, Curtin University of Technology.
- Alan, D. P. 2000. Dynamic thresholds for controlling encoding and retrieval operations in localist (or distributed) neural networks: The need for biologically plausible implementations. *Behavioral and Brain Sciences*, 23 (4): 488.
- Albrecht, G. L., Ketterings, Q. M., Czymmek, K. J., van Amburgh, M. E. and Fox, D. G. 2006. Whole Farm Nutrient Management: Capstone Course on Environmental Management of Dairy Farms. *Journal of Natural Resources and Life Sciences Education*, 35 (Journal Article): 12-23.
- Aldous, C. R. 2007. Creativity, Problem Solving and Innovative Science: Insights from History, Cognitive Psychology and Neuroscience. *International Education Journal*, 8 (2): 176-187.
- Allen, E. E. 1995. Active learning and teaching: Improving postsecondary library instruction. *Reference Librarian*, (51/52): 89.
- Andreas, D. 2000. From neural constructivism to cognitive constructivism: The steps to be taken. *Behavioral and Brain Sciences*, 23 (5): 781.
- Angelo, T. A. 1993. A "Teacher's dozen". *AAHE Bulletin*.
- Anglican Church of Southern Africa. 2011. *Lectionary for An Anglican Prayer Book 1989*. HarperCollins Publishers.
- Ansari, D. and Coch, D. 2006. Bridges over troubled waters: education and cognitive neuroscience. *TRENDS in Cognitive Sciences*, 10 (4).

- Antone, B. and Hill, D. 1992. Ethnostress: The Disruption of the Aboriginal Spirit. *Tribal Sovereignty Associates*.
- Armour, J. and Ardell, J. eds. 1984. *Neurocardiology*. New York: Oxford University Press.
- Ashby, F. G. and Maddox, W. T. 2005. Human Category Learning. *Annual Review of Psychology*, 56: 149.
- Ashley, R. 2004. Can a Woman have Authority Over a man? Some Biblical Questions and an Evangelical response. In: Harris, H. and Shaw, J. eds. *The Call for Women Bishops*. London: SPCK.
- ASSAf. 2010. The PhD Study: An evidence-based study on how to meet the demands for high-level skills in an emerging economy.
- Atkinson, P. 1997. Narrative turn or blind alley. *Qualitative Health Research*, 7: 325 - 344.
- Baker, D. G. 2001. Future homemakers and feminist awakenings: Autoethnography as a method in theological education and research. *Religious Education Association of USA and Canada*.
- Bakhurst, D. 2008. Minds, Brains and Education. *Journal of Philosophy of Education*, 42: 415-432.
- Bakke, S., Faley, R. H. and Steinberg, G. 2007. A Student-Centric Approach to Large Introductory IS Survey Courses. *Journal of Information Systems Education*, 18 (3): 321-328.
- Bangert, A. W. 2008. The Development and Validation of the Student Evaluation of Online Teaching Effectiveness. *Computers in the Schools*, 25 (1/2): 25-47.
- Barnacle, R. 2009. Gut Instinct: The body and learning. *Educational Philosophy and Theory*, 41 (1).
- Bartzokis, G. 2008. Lifespan Trajectory of Myelin Integrity and Maximum Motor Speed. *Neurobiology of Aging*.
- Begley, S. 2007. Train Your Mind Change Your Brain: How a New Science Reveals Our Extraordinary Potential to Transform Ourselves. New York, NY: Ballantine Books.
- Bell, S. J. 2007. Stop IAKT syndrome with student live search demos. *Reference Services Review*, 35 (1): 98-108.
- Ben, S., John, P. O. D., Peter, D., Martin, K. and et al. 2004. Temporal difference

models describe higher-order learning in humans. *Nature*, 429 (6992): 664.

Bennet, A. and Bennet, D. 2008. A new change model: factors for initiating and implementing personal action learning. *VINE: The Journal of Information & Knowledge Management Systems*, 38 (4): 378-387.

Benveniste, J. 1999. Electromagnetically Activated Water and the Puzzle of the Biological Signal. Paper presented at the *Talk at Cavendish Laboratory*
<http://www.tcm.phy.cam.ac.uk/~BDJ10/LECTURES/BENVENISTE99.HTML>,

Berry, A. and Loughran, J. 2005. Teaching about teaching- The role of self-study. In: Mitchell, C., Weber, S. and O'Reilly-Scanlon, K. eds. *Just Who Do We Think We Are?- Methodologies for autobiography and self-study in teaching*. . London: RoutledgeFalmer, 168-180.

Blackmore, S. 2004. *Consciousness: An Introduction*. New York, NY: Oxford University Press.

Bloch, G. 2009. *The Toxic Mix: What's wrong with South Africa's schools and how to fix it*. Cape Town: Tafelberg.

Boghossian, P. 2006. Behaviourism, Constructivism, and Socratic Pedagogy. *Educational Philosophy and Theory*, 38 (6).

Bonwell, C. C. and Eison, J. 1991. *Active Learning: Creating Excitement in the classroom AEHE-ERIC Higher Education Report No. 1*. Washington D.C: Jossey-Bass.

Botha, P. J. J. 1998. Rethinking the oral-written divide in Gospel criticism: the Jesus traditions in the light of Gossip research. *Voices - A Journal for Oral Studies*, 1 (January): 28 - 58.

Bownds, M. D. 1999. *The Biology of Mind: Origins and Structures of Mind, Brain, and Consciousness*. Bethesda, MD: Fitzgerald Science Press.

Boyas, E. A. 2008. Using PowerPoint to Encourage Active Learning: A Tool to Enhance Student Learning in the First Accounting Course. *International Journal of Information & Communication Technology Education*, 4 (2): 14-25.

Boyd, D. 2008. Autoethnography as a Tool for Transformative Learning About White Privilege. *Journal of Transformative Education*, 6: 212-225.

Boyer, E. L. 1990. *Scholarship Reconsidered - Priorities of the Professoriate*. New York: The Carnegie Foundation for the Advancement of Teaching.

Brand, A. G. 1999. *Writing, Emotion, and the Brain: What Graduate School Taught Me about Healing*. Available:
<http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED428388&site=ehost-live> (Accessed 20 June 2010)

- Brandt, R. 1999. Educators Need To Know about the Human Brain. *Phi Delta Kappan*, 81 (3): 235-238.
- Brandt, R. 2000. On Teaching Brains To Think: A Conversation with Robert Sylwester. *Educational Leadership*, 57 (7): 72-75.
- Bransford, J. D., Brown, A. L. and Cocking, R. R. 2000. *How People Learn: Brain, Mind, Experience, and School. Expanded Edition*. Washington D. C.: National Academy of Sciences - National Research Council
- Brant, J. L. 2008. Putting Down Roots: An Adult Educator's Learning in an Indigenous Context. Master of Adult education Studies, St Francis Xavier University.
- Brown, H. 2005. The 'Other' Brain, in the Stomach. *The New York Times*.
- Brown, R. 1994. The 'big picture' about managing writing. In: Zuber-Skerritt, O. and Ryan, Y. eds. *Quality in postgraduate education*. London: Kogan Page.
- Bruce, C. 1994. Supervising Literature Reviews. In (eds) *Quality Research in Postgraduate Education*. Kogan Page: Great Britain. In: Zuber-Skerritt, O. and Ryan, Y. eds. *Quality Research in Postgraduate Education*. Great Britain: Kogan Page.
- Bruer, J. T. 1998. Let's Put Brain Science on the Back Burner. *NASSP Bulletin*, 82 (598): 9-19.
- Bruer, J. T. 2006. On the Implications of Neuroscience Research for Science Teaching and Learning: Are There Any? A Skeptical Theme and Variations--The Primacy of Psychology in the Science of Learning. *CBE - Life Sciences Education*, 5 (2): 104-110.
- Bruner, J. 1977. *The Process of Education*. Cambridge Ma: Harvard University Press.
- Buber, M. 1958. *I-Thou*. Edinburgh: T & T Clark.
- Buffer, J. J., Jr. 1985. A Multidisciplinary Approach to Human Development and Learning. *Theory into Practice*, 24 (2): 145-148.
- Bullough, R., V. Jr and Pinnegar, S. 2001. Guidelines for Quality in Autobiographical Forms of Self-Study Research. *Educational Researcher*, 30 (3): 13 -21.
- Burns, C. S. 2006. The evolution of a graduate capstone accounting course. *Journal of Accounting Education*, 24 (2): 118-133.
- Burroway, J. 1987. *Writing fiction: A guide to Narrative Craft*. 2nd ed. Boston: Little, Brown, and Company Publishers.
- Byrne, J. H. 1986. Can Learning and Memory be Understood? *News in Physiological Sciences*, 1: 182-185.

- Byrnes, J. P. 2001. *Minds, Brains, and Learning: Understanding the Psychological and Educational Relevance of Neuroscientific Research*. New York, NY: The Guilford Press.
- Caine, R. N. and Caine, G. 1995. Reinventing Schools through Brain-Based Learning. *Educational Leadership*, 52 (7): 43-47.
- Caine, R. N. and Caine, G. 1998. Building a Bridge Between the Neurosciences and Education: Cautions and Possibilities. *NASSP Bulletin*, 82 (598): 1-8.
- Caine, R. N. and Caine, G. 1998. How to Think About the Brain. *School Administrator*, 55 (1): 12-16.
- Campbell, K., Gibson, S. and Gramlich, C. 2005. On conversation and design: a socially constructed practice. *Technology, Pedagogy & Education*, 14 (1): 9-24.
- Caponetti, L., Buscicchio, C. A. and Castellano, G. 2011. Biologically inspired emotion recognition from speech. *EURASIP Journal on Advances in Signal Processing*, 24.
- Capra, F. 1996. *The Web of Life - A New Synthesis of Mind and Matter*. London: Harper Collins.
- Carew, T. J. and Magsamen, S., H. 2010. Neuroscience and Education: An ideal partnership for producing evidence-based solutions to guide 21st century learning. *Neuron*, 67.
- Caroline, D., John, F. O. X., Karen, P., Claire, C., Rachel, S., Caroline, R. and McCOOL, C. 2008. Education level moderates learning on two versions of the Iowa Gambling Task. *Journal of the International Neuropsychological Society : JINS*, 14 (6): 1063.
- Carpenter, R. C., Lundell, V. and Rubin, B. 2007. Serious Games in the Global Affairs Classroom: Student Impressions of Pax Warrior as an Active Learning Tool. *Journal of Information Technology & Politics*, 4 (2): 117-129.
- Casey, B. J. 2000. Structural and Functional Brain Development and its Relation to Cognitive Development. *Biological Psychology*, 54: 241 -257.
- Cathleen, S. B. 2006. The evolution of a graduate capstone accounting course. *Journal of Accounting Education*, 24 (2/3): 118.
- Chang, I.-Y. and Chang, W.-Y. Winter 2012. The Effect of Student learning Motivation on Learning Satisfaction. *The International Journal of Organizational Innovation*, 4 (3).
- Chapman, G. 2008. *Love as a Way of Life*. London: Hodder & Stoughton.
- CHE. 2009. *Higher Education Monitor No 8: The State of Higher Education in South*

Africa. Pretoria: Council For Higher Education (CHE).

CHE. March 2010. *Higher Education Monitor No 9: Access and throughput in South African Higher Education: Three case studies*. Pretoria: Council For Higher Education (CHE).

Chickering, A. W., Dalton, J. C. and Stamm, L. 2005. *Encouraging Authenticity and Spirituality in Higher Education*. San Francisco, CA: Jossey-Bass.

Childre, D., Martin, H. and Beech, D. 1999. *The Heartmath Solution*. New York: HarperCollins.

Childs, K. 2005. Just where do I think I'm going? working with marginalized and disaffected youths and their self-study. In: Mitchell, C., Weber, S. and O'Reilly-Scanlon, K. eds. *Just Who Do We Think We Are?- Methodologies for autobiography and self-study in teaching*. . London: RoutledgeFalmer, 142- 153.

Christoff, K. 2008. Applying Neuroscientific Findings to Education: The Good, the Tough, and the Hopeful. *Mind, Brain, and Education*, 2 (2): 55-58.

Church, D. 2008. Psychological Clearing as Prelude to Soul Emergence. In: Goleman, D. ed. *Measuring the immeasurable: the scientific case for spirituality*. Boulder, CO: Sounds True, Inc.

Church of the Province of South Africa. 1989. *An Anglican Prayer Book*. London: Collins.

Clandinin, D. J. and Connelly, F. M. 2000. *Narrative inquiry: Experience and story in qualitative research*. San Francisco, CA: Jossey-Bass.

Clandinin, D. J. and Connelly, F. M. 2004. *Narrative Inquiry: Experience and Story in Qualitative Research*. Jossey-bass.

Clandinin, D. J., Pushor, D. and Orr, A. M. 2007. Navigating sites for narrative inquiry. *Journal of Teacher Education*, 58: 21 - 35.

Cochran-Smith, M. and Lytle, S. L. 1993. *Inside/Outside: Teacher research and knowledge*. New York: Teachers College Press.

Coia, L. and Taylor, M. 2009. Co/autoethnography: Exploring Our Teaching Selves Collaboratively. In: Tidwell, D. H., Melissa; Fitzgerald, Linda ed. *Research Methods for the Self-Study of Practice* Springer.

Coleman, L. 1995. Worship God in Dance. *Renewal Journal*: 35 -44.

Collins, F. S. 2007. *The Language of God- A scientist presents evidence for belief*. London: Simon & Schuster.

Collins, L. J., Moore, M. E. and Shaw-Kokot, J. 2007. Livening Up the Classroom: Using Audience Response Systems to Promote Active Learning. *Medical Reference*

Services Quarterly, 26 (1): 81-88.

Collister, R. C. 2008. A journey in search of wholeness and meaning: Investigating a harmonious ontology which could facilitate the conditions for holistic, transformative epistemologies within the structures of a community with a view to creating a sustainable future for all beings. Doctor of Philosophy, University of New England.

Connelly, F. M. and Clandinin, D. J. 2006. Narrative Inquiry. In: Green, J. L., Camilli, G. and Elmore, P. eds. *Handbook of complementary methods in education research*. Mahwah, NJ: Lawrence Erlbaum.

Conolly, J. 2001. An Annotated and Glossed English Translation of Memory, Memorisation and Memorisers in Ancient Galilee by Marcel Jousse: A Study of the Origin, Nature, Analysis and Recording of Mnemonic Rhythmo-stylistic Texts. PhD, University of Natal.

Conolly, J. 2002. Memory, Media and Research: Mnemonic Oral-style, Rhythmo-stylistics and the Computer. *Alternation*, 9 (2): 156 - 178.

Conolly, J. 2006. *Holistic Learning and Integrated Teaching Workshops* presented at Durban University of Technology

Conolly, J. and Timm, D. 2005. Exploring the Nature and Operation of Learning as a BioChemical Process. Paper presented at the *South African Academic Development Association (SAADA)*. Durban University of Technology, Unpublished,

Cooke, L. A. and Timm, D. 2004. Assessment Report - TELP Programme Implementation Letter (PIL 119A). Durban Institute of Technology, Durban.

Cooperstein, S. E. and Kocevar-Weidinger, E. 2004. Beyond active learning: a constructivist approach to learning. *Reference Services Review*, 32 (2): 141-148.

Covey, S. M. R. 2006. *The Speed of Trust: The One Thing that Changes Everything*. USA: CoveyLink.

Coyle, D. 2009. *The Talent Code*. London: Random House.

Cozolino, L. and Sprokay, S. 2006. Neuroscience and Adult Learning. *New Directions for Adult and Continuing Education*, (110): 11-19.

Crowson, H. M. 1998. *Reciprocal Interaction and the Brain-Education Dilemma*.

Dadds, M. and Hart, S. 2001. *Doing Practitioner Research Differently*. London: Routledge Falmer.

D'Arcangelo, M. 1998. The Brains Behind the Brain. *Educational Leadership*, 56 (3): 20-25.

D'Arcangelo, M. 2000. How Does the Brain Develop? A Conversation with Steven Petersen. *Educational Leadership*, 58 (3): 68-71.

David, E. 2001. Authority of the brain. *Pediatrics*, 107 (4): 964.

David, J. F. and Matthew, A. W. 2006. Reverse replay of behavioural sequences in hippocampal place cells during the awake state. *Nature*, 440 (7084): 680.

David, J. L. 2003. From Molecules to Memory in the Cerebellum. *Science*, 301 (5640): 1682.

de Chardin, P. T. 1959. *Phenomenon of man*. New York: Harper.

de Quincey, C. 1993. Bioelectromagnetics: Old Roots of a New Science. *Noetic Sciences Review*, (Winter): 30-32.

Denzin, N. K. 1997. *Interpretive ethnography: ethnographic practices for the 21st century*. Thousand Oaks: Sage Publications Inc.

Denzin, N. K. and Lincoln, Y. eds. 1994. *Handbook of Qualitative Research*. Thousand Oaks CA: Sage Publications.

Derry, C. 2005. Drawings as a research tool for self-study: an embodied method of exploring memories of childhood bullying. In: Mitchell, C., Weber, S. and O'Reilly-Scanlon, K. eds. *Just Who Do We Think We Are?- Methodologies for autobiography and self-study in teaching*. . London: RoutledgeFalmer, 142- 153.

Desmond, A. 2010. A Journey in Family Literacy: Investigation into the Influences on the Development of an Approach to Family Literacy. D Tech (Education), Durban University of Technology.

Dewey, J. 1916. *Democracy and education: An introduction to the philosophy of education*. New York: The McMillan Company.

Dewey, J. 1934. *Art as an experience*. New York: G.P. Putnam's Sons.

Dewey, J. 1938. *Experience and Education*. New York: Simon and Schuster

Diakonia Council of Churches. 2011. Towards a Transformed Society. Diakonia Council of Churches, Durban.

Diego, E. B. and Yadin, D. 2001. Memory extinction, learning anew, and learning the new: Dissociations in the molecular machinery of learning in cortex. *Science*, 291 (5512): 2417.

Dinkelman, T. 2003. Self-Study in teacher education: A means and ends tool for promoting reflective teaching. *Journal of Teacher Education*, 54 (1): 6 - 19.

The Forces of Healing: Reflections on energy, consciousness, and the beef stroganoff principle (5 pages). Available: <http://twm.co.nz/dossey1.html> (Accessed 2005/11/07).

- Dossey, L. 2009. *Healing Beyond the Body*. London: Piatkus Books.
- Dretsch, M. N. and Tipples, J. 2008. Working Memory Involved in Predicting Future Outcomes Based on Past Experiences. *Brain and Cognition*, 66 (1): 83-90.
- Drinka, D. and Yen, M. Y.-M. 2008. Controlling Curriculum Redesign with a Process Improvement Model. *Journal of Information Systems Education*, 19 (3): 331-342.
- du Pre, R. 2009. *The Place and Role of Universities of Technology in South Africa*. Bloemfontein: South African Technology Network.
- Ellis, C. 2004. *The ethnographic I: a methodological novel about autoethnography*. Walnut Creek, CA: AltaMira Press.
- Ellis, C. and Bochner, A. P. 2000. Autoethnography, Personal, Narrative, Reflexivity. In: Denzin, N. K. and Lincoln, Y. eds. *Handbook of Qualitative Research*. Thousand Oaks CA: Sage Publications.
- Elsbeth, S. 2005. Pedagogy Meets Neuroscience. *Science*, 310 (5749): 745.
- Emoto, M. 2004. *The Hidden Messages in Water*. Thayne, D. A. Hillsboro: Beyond Words Publishing.
- Eppes, T. A., Milanovic, I. and Sweitzer, H. F. 2012. Strengthening Capstone Skills in STEM Programs. *Innovative Higher Education*, 37 (1): 3-10.
- Erika, D., Anna Stigsdotter, N., Anne, L., Lars, B. and Lars, N. 2008. Transfer of Learning After Updating Training Mediated by the Striatum. *Science*, 320 (5882): 1510.
- Evans, J. 2006. President's address 2005. *AXON/ L'AXONE*, 27 (3): 4-5.
- Fagnou, D., D. and Tucek, J. M. 1995. The Biochemistry of Learning and memory. *Molecular and Cellular Biochemistry*, 149/150: 279 -286.
- Feldman, D. V. 2011. *Mathematical connections: a capstone course*. Available: http://dut.summon.serialssolutions.com/link/0/eLvHCXMwQ7QykcsDY8LgZE5sKzUtQSPxYWHmoT7WEZ6GbkjFfZuogxybq4hzh66sElzPiUnJ97I2MzCEnRquqEpX3SC8txV_S63Zk0_stom7_B3AJIsK84 (Accessed 3 February 2012)
- Fields, R. D. 2005. Myelination: An Overlooked Mechanism of Synaptic Plasticity? *Neuroscientist*, 11 (6): 528 -531.
- Fields, R. D. 2008. White matter in Learning, Cognition, and Psychiatric Disorders. *Trends in Neurosciences*, 31 (7): 361 -370.
- Fields, R. D. 2008. White Matter Matters. *Scientific American*: 54 - 61.
- Frank, A. 2000. The standpoint of storyteller. *Qualitative Health Research*, 10: 354-365.

- Frankl, V. E. 2004. *Man's Search for Meaning*. London: Rider.
- Frysinger, R. C. and Harper, R. M. 1990. Cardiac and respiratory correlations with unit discharge in epileptic human temporal lobe. *Epilepsia*, 31 (2): 162-171.
- Gagne, R. M. 1985. *The Conditions of Learning*. 4ed ed. New York: Holt, Rinehart and Winston.
- Gamelin, A. K. 2005. The sand diaries- Visions, vulnerability and self-study. In: Mitchell, C., Weber, S. and O'Reilly-Scanlon, K. eds. *Just Who Do We Think We Are?- Methodologies for autobiography and self-study in teaching*. . London: RoutledgeFalmer.
- Gardner, H. 1993. *Multiple Intelligences - The Theory in Practice*. New York: Basic Books
- Gardner, H. 2006. *Frames of Mind - The Theory of Multiple Intelligences*. New York: Basic Books
- Garris, R., Ahlers, R. and Driskell, J. E. 2002. Games, motivation, and learning: a research and practice model. *Simulation & Gaming*, 33: 441 -467.
- Gathercoal, P. 1999. *Endorphins and Media Messages: Addicting Students to Mediated Violence and Emotion*. Available: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED437926&site=ehost-live> (Accessed 28 September 2009).
- Geake, J. 2008. Neuromythologies in Education. *Educational Research*, 50 (2): 123-133.
- Gershon, M. D. 1998. *The Second Brain*. New York: Harper Collins.
- Gershon, M. D. 1999. The Enteric Nervous System: A Second Brain *Hospital Practice*, 07: (Accessed 2005/10/05).
- Gershon, M. D. 1999. The Enteric Nervous System: A Second Brain *Hospital Practice*, 34 (7): 31-32; 35-38;41-42.
- Gibson, E. 1969. *Principles of Perceptual Learning and Development*. New York: Appleton.
- Gloria, M. A. S. T., Lineu, C. F., Josiane, M. F. T., Rebeca, M. C. and Marcelo, G. C. 2006. Benign Childhood Epilepsy With Centro-Temporal Spikes: Quantitative EEG and the Wechsler Intelligence Scale for Children (WISC-III). *Clinical EEG and Neuroscience*, 37 (3): 193.
- Goleman, D. 1995. *Emotional Intelligence*. New York: Bantam Books.
- Goleman, D. 1998. *Working with emotional intelligence*. Great Britain: Bloomsbury.

Goleman, D. 2006. *Emotional Intelligence*. 10th Anniversary edition ed. New York: Bantam Books.

Goleman, D. 2007. *Social Intelligence- The New Science of Human Relationships*. London: Arrow Books.

Gom, O. 2009. Motivation and Adult Learning. *Contemporary PNG Studies: DWU Research Journal*, 10.

Goodier, F. T. 1943. 11 Methods of Jesus the Teacher. *The Clearing House*, 17 (8): 497.

Gose, M. 2009. When Socratic Dialogue is Flagging. *College Teaching*, 57 (1): 45 - 48

Goswami, U. 2004. Neuroscience, Education and Special Education. *British Journal of Special Education*, 31 (4): 175-183.

Goswami, U. 2006. *Neuroscience and education: from research to practice?* : Advance Online Publication.

Goswami, U. 2008. Principles of Learning, Implications for Teaching: A Cognitive Neuroscience Perspective. *Journal of Philosophy of Education*, 42: 381-399.

Govender, D. 2002. An Innovative Method for Biomedical Technology Learners Paper presented at the *Mini Congress - SMLTSA, KZN Coastal Branch*. Durban,

Greene, M. 1978. *Landscapes of Learning*. New York: Teachers College Press.

Greenleaf, R. 1977. *Servant Leadership: A journey into the nature of legitimate power and greatness*. New Jersey. : Paulist Press.

Greenleaf, R. K. 1999. It's Never Too Late! What Neuroscience Has to Offer High Schools. *NASSP Bulletin*, 83 (608): 81-89.

Greg, M. 2004. Brain Cells May Pay the Price for A Bad Night's Sleep. *Science*, 306 (5699): 1126.

Guilfoyle, K., Placier, P., Hamilton, M. L. and Pinnegar, S. 2002. Exploring the concept of dialogue in the self-study of teaching practices. In: Proceedings of *Fourth International Conference on Self-study of Teacher Education Practices*. Herstmonceux, East Sussex, England, Toronto Ontario:OISE, University of Toronto, 96-103

Gumede, J. T. 2011. An Auto-Ethnographic Enquiry: Critical Reflection on the Influences in the Development of a Black African Male Educator DTech (Education), Durban University of Technology.

Haberlandt, K. 1998. *Human Memory: Exploration and Application*. Boston, MA:

Allyn & Bacon.

Hall, M. and Brier, G. 2007. From "Frustrating" Forgetfulness to "Fabulous" Forethought. *Science Teacher*, 74 (1): 24-27.

Hamilton, M. L. and LaBoskey, V. 2002. Delineating the territory: reclaiming and refining the self-study of teaching practices. Paper presented at the *Annual conference of American Educational Research Association*. New Orleans.

Hamilton, M. L. and Pinnegar, S. 1998. Conclusion: The value and the promise of self-study. In: Hamilton, M. L. ed. *Reconceptualising teaching practice: Self-Study in Teacher Education*. London: Falmer Press, 235 - 246.

Hamilton, M. L., Smith, L. and Worthington, K. 2008. Fitting the Methodology with the Research: an exploration of narrative, self-study and autoethnography. *Studying Teacher Education*, 4 (1): 17 - 28.

Harris, H. and Shaw, J. eds. 2004. *The Call for Women Bishops*. London: SPCK.

Helms, H. M. ed. 2010. *The Confessions of Saint Augustine*. Brewster, Massachusetts: Paraclete Press.

Helmut, J. K. and Daniel, J. 2005. Target Cell-Dependent Normalization of Transmitter Release at Neocortical Synapses. *Science*, 308 (5723): 863.

Hendry, G. D. and King, R. C. 1994. On Theory of Learning and Knowledge: Educational Implications of Advances in Neuroscience. *Science Education*, 78 (3): 223-253.

Hernandez, W. 2012. *Henri Nouwen and Spiritual Polarities - a Life of Tension*. New York: Paulist Press.

Hill, D. 1999. Holistic Learning: A Model of Education based on Aboriginal Cultural Philosophy. Master of Adult Education, Saint Francis Xavier University.

Hill, D. and George, P. 1996. *Native Learning Styles- An Assessment Tool*. Owen Sound: Ontario: Ningwakwe Clearing House.

Holdstock, L. 1987. *Education for a New Nation*. Johannesburg: Africa Transpersonal Association.

Holman Jones, S. 2002. The way we were, are and might be: Torch singing as autoethnography. In: Ellis, C. and Bochner, A. P. eds. *Ethnographically speaking: Autoethnography, literature, and aesthetics*. Walnut Creek, California: AltaMira Press, 44-56.

hooks, b. 1989. 'Choosing the margins as a space of radical openness'. *Framework*, 36: 17.

Howard-Jones, P. 2008. Philosophical Challenges for Researchers at the Interface between Neuroscience and Education. *Journal of Philosophy of Education*, 42: 361-380.

Huizenga, J., Admiraal, W., Akkerman, S. and ten Dam, G. 2009. Mobile game-based learning in secondary education: engagement, motivation and learning in a mobile city game. *Journal of Computer Assisted Learning*, 25: 332 - 344.

Hupbach, A., Hardt, O., Gomez, R. and Nadel, L. 2008. The Dynamics of Memory: Context-Dependent Updating. *Learning & Memory*, 15 (8): 574-579.

Hutchison, D. and Bosacki, S. Winter 2000. Over the edge: Can holistic education contribute to experiential education? *The Journal of Experiential Education*, 23 (3): 177 - 183.

Huxtable, M. 2008. How Do I Improve My Educational Practice As I Support Educators Who Are Developing Inclusive And Inclusional Theory And Practice Of Gifts And Talents Whilst Responding To National Developments? Paper presented at the *British Educational Research Association Annual Conference*. Edinburgh, Scotland,

Huxtable, M. 2009. Developing Talents to Create and Offer Knowledge of the Self and the World as Educational Gifts. *Educational Journal of Living Theories*, 2 (2): 215 -231.

Hymer, B. 2007. *How do I understand and communicate my values and beliefs in my work as an educator in the field of giftedness? D.Ed.Psy.* Available: <http://www.actionresearch.net/writings/hymer.shtml> (Accessed 03 May 2009).

Ignacimuthu, R. D. 2010. *Environmental Spirituality*. Mumbai: St Pauls.

Ilana, S. H. and Robert, T. K. 2004. Sleep on it. *Nature*, 430 (6995): 27.

Illeris, K. 2002. *Three Dimensions of Learning*. Roskilde/Leicester: Roskilde University Press/NIACE.

Immordino-Yang, M. H. 2007. A Tale of Two Cases: Lessons for Education from the Study of Two Boys Living with Half Their Brains. *Mind, Brain, and Education*, 1 (2): 66-83.

Immordino-Yang, M. H. and Damasio, A. 2007. We Feel, Therefore We Learn: The Relevance of Affective and Social Neuroscience to Education. *Mind, Brain, and Education*, 1 (1): 3-10.

Jacobsen, W. 1991. Women and Vocation: the "If" Question. In: Ackermann, D., Draper, J. and Mashinini, E. eds. *Women Hold up Half the Sky: Wmoen in the Church in Southern Africa*. Pietermaritzburg: Cluster Publications.

Jansen, J. D. 1998. Curriculum reform in South Africa: A Critical Analysis of outcomes-based education. *Cambridge Journal of Education*, 28 (3): 321 - 331.

Jarvis, P., Holford, J. and Griffin, C. 2003. *The theory and practice of learning*. 2nd ed. London: Kogan Page Limited.

Jensen, E. 1998. *Teaching with the Brain in Mind*. Alexandria, VA: Association for Supervision and Curriculum Development.

Jensen, E. 2000. Brain-based Learning: A Reality Check. *Educational Leadership*, 57 (7): 76-80.

Jensen, E. 2006. *Enriching the Brain: How to Maximize Every Learners Potential*. San Francisco, CA: Jossey-Bass.

Jensen, E. 2008. Exciting Times Call for Collaboration. *Phi Delta Kappan*, 89 (6): 428-431.

John, C. F. 2000. Emotional networks: The heart of brain design. *Behavioral and Brain Sciences*, 23 (2): 198.

John, M., Guy, C. and David, B. 2002. Error-driven motor learning in fish. *The Biological Bulletin*, 203 (2): 238.

John, N. J. R., Brian, I. H. and Jeffery, R. W. 2001. A cellular mechanism of reward-related learning. *Nature*, 413 (6851): 67.

Johnson, B. 2006. South African academia in crisis: the spread of 'contrived collegial managerialism'. *South Africa Journal of Higher Education*, 20 (1): 58 - 71.

Jones, R. 1995. Smart Brains. *American School Board Journal*, 182 (11): 22-26.

Jousse, M. 1925. *The Oral Style*. Sienaert, E. and Conolly, J. Durban: Mantis Publishing.

Jousse, M. 2000. *The Anthropology of Geste and Rhythm*. Second ed. Sienaert, E. and Conolly, J. Durban: Mantis.

Jousse, M. 2001. *Memory, Memorization, and Memorisers in Ancient Galilee*. Durban: Mantis Publishing.

Jousse, M. 2001. *The Parallel Rhythmic Recitatives of the Rabbis of Israel*. Durban: Mantis Publishing.

Jousse, M. 2004. *Holism and Education*. Sienaert, E. and Conolly, J. Cape Town: Mantis Publishing.

The Fundamentals of Human Expression and Communication- Seven Lectures by Marcel Jousse. 2005. Durban: Mantis Publishing.

Jousse, M. 2006. *Be Yourself! Colonisation, Self-Colonisation and Decolonisation*. Sienaert, E. and Conolly, J. Cape Town: Mantis Publishing.

- Jousse, M. 2010. *The rhythmic and mnemotechnical Oral style among the Verbo-Motors*. Sienaert, E. and Conolly, J. Durban: Mantis Publishing.
- Julie, A. K. 2004. Learning Mechanisms in Adddiction: Synaptic Plasticity in the Ventral Tegmental Area as a Result of Exposure to Drugs of Abuse. *Annual Review of Physiology*, 66: 447.
- Kalantzis, M. and Cope, B. 2008. *New Learning: elements of a science of education*. New York: Cambridge University Press.
- Kandel, E. R. 2006. *In Search of Memory: The Emergence of a New Science of Mind*. New York: W W Norton.
- Kandeler, R. and Ullrich, W. R. 2009. Symbolism of plants: examples from European-Mediterranean culture presented with biology and history of art. *Journal of Experimental Botany*, 60 (13): 3611 - 3613.
- Kareem, A. Z., Justin, A. B., Christoph, T. W., Kathryn, M., Jurg, L. J., Gordon, H. B. and Michael, J. K. 2009. Human Substantia Nigra Neurons Encode Unexpected Financial Rewards. *Science*, 323 (5920): 1496.
- Katherine, A. S., Stephanie, R., Jeremy, K. and Chris, M. 2008. Use of a Web-Based Game to Teach Pediatric Content to Medical Students. *Ambulatory Pediatrics*, 8 (6): 354.
- Kaufmann, L. 2008. Dyscalculia: Neuroscience and Education. *Educational Research*, 50 (2): 163-175.
- Keane, H. 2008. Pleasure and discipline in the uses of Ritalin. *International Journal of Drug Policy*, 19: 401 - 409.
- Kempermann, G. and Gage, F. H. 1999. New Nerve Cells for the Adult Brain. *Scientific American*, 280 (5): 48-53.
- Kincheloe, J. L. 2005. On to the Next Level: Continuing the Conceptualization of the Bricolage. *Qualitative Inquiry*, 11 (3): 323-350.
- King, A. 1993. From Sage on the Stage to Guide on the Side. *College Teaching*, 41 (1): 30 - 35.
- Klingberg, T. 2000. Microstructure of Temporo-Parietal White Matter as a basis for Reading Ability. *Neuron*, 25: 493 - 500.
- Kolb, D. A. 1984. *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs NJ: Prentice-Hall.
- Kormanski, L. M. 1988. Using the Johari Window to Study Characterization. *Journal of Reading*, 32 (2): 146 - 152.

Krishnamurti, J. 1968. *Education and the Significance of Life*. London: Victor Gollancz.

Kvale, S. 1996. *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks, Calif.: Sage Publications.

LaBoskey, V. 2004. The methodology of self-study and its theoretical underpinnings. In: Loughran, J., Hamilton, M. L., LaBoskey, V. and Russell, T. eds. *International Handbook of self-study of teaching practices*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

LaBoskey, V. 2005. Speak for yourselves - Capturing the complexity of critical reflection. In: Mitchell, C., Weber, S. and O'Reilly-Scanlon, K. eds. *Just Who Do We Think We Are?- Methodologies for autobiography and self-study in teaching* London: RoutledgeFalmer, 131- 141.

Lacey, J. and Lacey, B. 1970. Some autonomic-central nervous system interrelationships. In: Black, P. ed. *Physiological Correlates of Emotion*. New York: Academic Press, 205 - 227.

Laird, D. 1985. *Approaches to training and Development*. Massachusetts: Addison-Wesley.

Lamon, M. and Laferriere, T. 2003. Neuroscience, the Learning Sciences, and Innovation. *Education Canada*, 43 (2): 28-31.

Lave, J. and Wenger, E. 1991. *Situated Learning. Legitimate peripheral participation*. Cambridge: University of Cambridge Press.

Leaf, C. 2005. *Switch on your brain*. Cape Town: Tafelberg Publishers.

Leamson, R. 2000. Learning as Biological Brain Change. *Change*, (November): (Accessed 2006/02/05).

Lescher, B. H. and Liebert, E. eds. 2006. *Exploring Christian Spirituality: essays in honor of Sandra M Schneiders*. New Jersey: Paulist Press.

Levine, M. and Barringer, M.-D. 2008. Getting the Lowdown on the Slowdown. *Principal*, 87 (3): 14-18.

Lipton, B. 2005. *The Biology of Belief: Unleashing the Power of Consciousness, Matter, and Miracles*. Santa Rosa, CA: Mountain of Love/Elite Books.

Liston, D. D. 1994. *Story-Telling and Narrative: A Neurophilosophical Perspective*. Available:

<http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED372092&site=ehost-live> (Accessed 28 September 2011)

Liston, D. D. 1995. Basic Guidelines for Brain-Compatible Classrooms: Theory to

Praxis. Paper presented at the *Annual Meeting of the American Educational Research Association*. San Francisco, CA, April 18-22, 1995. Available: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED385201&site=ehost-live> (Accessed 20 July 2012).

Liston, D. D. 1996. Changing Our Minds: The Struggle To Generate a Humanistic Neuroscience Language through Metaphors from Quantum Physics. Paper presented at the *Annual Meeting of the American Educational Research Association*. New York, April 8-12, 1996. Available: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED401285&site=ehost-live> (Accessed 26 July 2011)

Liston, D. P. 2000. Love and Despair in Teaching. *Educational Theory*, 50 (1): 81-102.

Loughran, J. and Northfield, J. 1998. A framework for the development of self-study practice. . In: Hamilton ed. *Reconceptualizing Teaching Practice: Self-Study in Teacher Education*. London: Falmer Press, 7-18.

Luft, J. 1969. *Of Human Interaction*. Palo Alto, CA: National Press Books, 1969.

Macquarrie, J. 1973. *The Faith of the People of God - a Lay Theology*. London: SCM Press Ltd.

Malone, T. W. and Lepper, M. R. 1987. Making learning fun: a taxonomic model of intrinsic motivations for learning. In: Snow, R. E. and Farr, M. J. eds. *Aptitude, Learning, and Instruction: III. Cognitive and Affective Process Analysis*. Hillsdale, NJ: Erlbaum.

Marcia, B. 1999. Learning visualized on the double. *Science*, 286 (5445): 1661.

Marcia, B. 2000. A critical issue for the brain. *Science*, 288 (5474): 2116.

Marcia, B. 2000. Translational roots for mental retardation? *Science*, 290 (5492): 737.

Mario de, B. and Andres Villu, M. 2005. Neuronal Substrates of Complex Behaviors in *C. elegans*. *Annual Review of Neuroscience*, 28: 451.

Martha Bridge, D. 2005. Samuel Torrey Orton Award To Martha Bridge Denckla: Citation. *Annals of Dyslexia*, 55 (2): 147.

Maslow, A. 1968. *Towards a Psychology of Being*. 2nd ed. New York: Van Nostrand.

Massey, A. P., Brown, S. A. and Jeanne, D. J. 2005. It's All Fun and Games ... Until Students Learn. *Journal of Information Systems Education*, 16 (1): 9-14.

McAvoy, J. and Sammon, D. 2005. Agile Methodology Adoption Decisions: An Innovative Approach to Teaching and Learning. *Journal of Information Systems Education*, 16 (4): 409-420.

- McCormack, J., Beyerlein, S., Brackin, P., Davis, D., Trevisan, M., Davis, H., Lebeau, J., Gerlick, R., Thompson, P., Khan, M. J., Leiffer, P. and Howe, S. 2011. Assessing Professional Skill Development in Capstone Design Courses. *International Journal Of Engineering Education*, 27 (6): 1308-1323.
- McCraty, R., Tiller, W. A. and Atkinson, M. 1996. Head-heart entertainment: A preliminary survey. In: *Proceedings of Proceedings of the Brain-Mind Applied Neurophysiology EEG Neurofeedback Meeting*. Key West, Florida,
- McGill, I. and Brockbank, A. 2004. *The Action Learning Handbook- powerful techniques for education, professional development and training*. New York: Routledge Falmer.
- McNiff, J. 2010. *Action Research for Professional Development - Concise advice for new and experienced action researchers*. Dorset: September Books.
- McNiff, J. and Whitehead, J. 2006. *All You Need To Know about Action Research*. London: Sage.
- Merriam, S. and Caffarella. 1998. *Learning in Adulthood. A Comprehensive Guide*. San Francisco: Jossey-Bass.
- Merriam, S. B., Caffarella, A. S. and Baumgartner, L. M. 2007. *Learning in Adulthood: A Comprehensive Guide*. San Francisco, CA: Jossey-Bass and Sons.
- Michael, S. B. and Allison, J. D. 2002. What songbirds teach us about learning. *Nature*, 417 (6886): 351.
- Michael, S. F. and Andrew, M. P. 2005. The Neuroscience of Mammalian Associative Learning. *Annual Review of Psychology*, 56: 207.
- Miller, B. 2009. *Your Life in Rhythm*. Carol Streams, Illinois: Tyndale House Publishers, Inc.
- Miller, E. M. 1994. Intelligence and Brain Myelination: A Hypothesis. *Personality and Individual Differences*, 17: 803-832.
- Miller, J., P. 2000. *Education and The Soul Toward a Spiritual Curriculum*. Albany: State University of New York.
- Miller, S. and Tallal, P. A. 2006. Addressing Literacy through Neuroscience. *School Administrator*, 63 (11): 19.
- Mills, C. W. 1959. *The sociological imagination*. New York: Oxford University Press.
- Ministry of Education. 2001. *National Plan for Higher Education*. Pretoria: Government Printers.
- Mitchell, C. and Weber, S. 1999. *Reinventing Ourselves as Teachers - Beyond*

Nostalgia. London: Falmer Press.

Mitchell, C., Weber, S. and O'Reilly-Scanlon, K. eds. 2005. *Just Who Do We Think We Are?- Methodologies for autobiography and self-study in teaching*. London: RoutledgeFalmer.

Mollica, A. and Danesi, M. 1995. The Foray into the Neurosciences: Have We Learned Anything Useful Yet? *Mosaic*, 2 (4): 12-20.

Moon, J. A. 2004. *A Handbook of Reflective and Experiential Learning- Theory and Practice*. New York: RoutledgeFalmer.

Mooney, R. L. 1957. The Researcher Himself. In: *Research for curriculum improvement, Association for Supervision and Curriculum Development, 1957 Yearbook*. Washington DC: Association for Supervision and Curriculum Development, 154 -186.

Morgan, R. 2010. *Beyond Ourselves - a course which explores the wider meaning of our lives*. Somerset: ReSource.

Mungai, D. and Jones, D. 2002. Games to Teach By. In: *Proceedings of 18th Annual Conference on Distance Teaching and Learning*. Wisconsin,

Naidoo, D. and Cooke, L. A. 2000. *PIL 119 Project Proposal* Durban: ML Sultan Technikon.

Nance, L. G., Nathan, P. S. and Nelson, S. 2002. Dendritic spikes as a mechanism for cooperative long-term potentiation. *Nature*, 418 (6895): 326.

Nardi, B. A. 1998. Concepts of Cognition and Consciousness: Four Voices. *Journal of Computer Documentation*, 22 (1): 31-48.

Nelson, C. A. 1995. The Ontogeny of Human Memory: A Cognitive Neuroscience Perspective. *Developmental Psychology*, 31 (5): 723-738.

Nelson, M. L. and Hauck, R. V. 2008. Clicking to Learn: A Case Study of Embedding Radio-Frequency based Clickers in an Introductory Management Information Systems Course. *Journal of Information Systems Education*, 19 (1): 55-64.

Ngaloshe, C. N. 2012. Breaking the silence, addressing the confusion and challenging denial surrounding HIV and AIDS by engaging tradition: a study of the mnemonic oral style with special reference to Marcel Jousse. D Tech (Education), Durban University of Technology.

Nicolson, R. 2010. *The Hospitality of God*. Diocese of Natal, Anglican Church of Southern Africa, Pietermaritzburg.

Niranjan, I. 2004. Learning Occupational Health and Safety legislation by using Educational Games. Paper presented at the *8th World Congress on Environmental Health*. ICC, Durban, 23 - 27 February 2004.

Niranjan, I. 2005. Evaluation of Training and Development technique amongst Environmental Health learners: An Alternative model using the Occupational Health and Safety Act, 1993 (Act 85 of 1993). Masters in Public Administration, University of Kwa-Zulu Natal.

Nosich, G. M. 2005. *Learning to Think Things Through- A Guide to Critical Thinking Across the Curriculum*. New Jersey: Pearson Prentice Hall.

O'Boyle, M. W. 2008. Mathematically Gifted Children: Developmental Brain Characteristics and Their Prognosis for Well-Being. *Roeper Review*, 30 (3): 181-186.

Olivier, B., Colleen, A. M., Ralph, J. D., Vaishnav, K. and et al. 2006. Essential Role of BDNF in the Mesolimbic Dopamine Pathway in Social Defeat Stress. *Science*, 311 (5762): 864.

Omrod, J. E. 1999. *Human Learning*. 3rd ed. Englewood Cliffs, NJ: Merrill.

Parker Palmer on Teaching (8 pages). Available: <http://www.miracosta.cc.ca.us/home/gfloren/palmer.htm> (Accessed 2005/09/15).

Palmer, P. J. 1993. *To know as we are known: Education as a Spiritual journey*. New York: Harper Collins.

Palmer, P. J. 1999. Evoking the spirit in public education. *Educational Leadership*, 56 (4): 6 - 11.

Palmer, P. J. 2000. *Let your life speak: Listening for the voice of vocation*. San Francisco, California: Jossey-Bass: A Wiley Company.

Palmer, P. J. 2003. Teaching with Heart and Soul: Reflections on Spirituality in Teacher Education. *Journal of Teacher Education*, 54: 376.

Palmer, P. J. 2007. *The Courage to Teach: Exploring the inner landscape of a teacher's life*. San Francisco, California: Jossey-Bass.

Paretti, M. C. 2008. Teaching Communication in Capstone Design: The Role of the Instructor in Situated Learning. *JOURNAL OF ENGINEERING EDUCATION*, 97 (4): 491-503.

Park, B. 2006. The Science of Learning Meets the Art of Teaching. *Education Canada*, 46 (4): 63-66.

Pascale, W., Anthony, D. and Wolfram, S. 2001. Dopamine responses comply with basic assumptions of formal learning theory. *Nature*, 412 (6842): 43.

Patricia, K. and Maritza, R.-G. 2008. Neural Substrates of Language Acquisition. *Annual Review of Neuroscience*, 31: 511.

Pert, C. B. 1999. *Molecules of Emotion- Why you feel the way you feel*. Surrey:

Pocket books.

Pert, C. B. 2000. *Your Body is your subconscious Mind*. Boulder Colorado: Sounds true.

Pert, C. B. 2006. *Everything You Need to Know to Feel Go(o)d*. Carlsbad, California: Hay House Inc.

Pert, C. B. 2008. The Science of emotions and Consciousness. In: Goleman, D. ed. *Measuring the immeasurable: the scientific case for spirituality*. Boulder, CO: Sounds True, Inc.

Peter, J. B., Jennifer, C. F. and Larry, R. S. 2005. Robust habit learning in the absence of awareness and independent of the medial temporal lobe. *Nature*, 436 (7050): 550.

Peterson, R. W. 1984. Great Expectations: Collaboration between the Brain Sciences and Education. *American Biology Teacher*, 46 (2): 74-80.

Phelps, B. J. 2007. Why We Are Still Not Cognitive Psychologists: A Review of Why I Am Not a Cognitive Psychologist: A Tribute to B. F. Skinner. *Behavior Analyst*, 30 (2): 217-226.

Piaget, J. 1926. *The Child's Conception of the World*. London: Routledge and Kegan Paul.

Pierre, M. 2001. The role of sleep in learning and memory. *Science*, 294 (5544): 1048.

Pillay, T. S. 2010. Student Enrolment Planning in Public Higher Education: A South African Case Study. D Tech (Public Management), Durban University of Technology.

Pinnegar, S. and Hamilton, M. L. 2009. *Self-Study of Practice as a Genre of Qualitative Research- Theory, Methodology, and Practice*. New York: Springer.

Pinnegar, S., Hamilton, M. L. and Fitzgerald, L. 2010. Guidance in Being and becoming Self-Study of Practice Researchers. In: Proceedings of *8th International Conference on S-STEP*. Herstmonceux, UK,

Pithouse, K., Mitchell, C. and Weber, S. 2009. Self-study in teaching and teacher development: a call to action. *Educational Action Research*, 17 (1): 43 - 62.

Pithouse- Morgan, K. 2010. *Examiners Report on Doctoral Thesis*. Durban.

Plotkin, H. 1994. *Darwin Machines and the Nature of Knowledge*. Cambridge, MA: Harvard University Press.

Polanyi, M. 1958. *Personal Knowledge*. Chicago: University of Chicago Press.

Poldrack, R. A., Clark, J., Pare-Blagoev, E. J., Shohamy, D. and et al. 2001.

- Interactive memory systems in the human brain. *Nature*, 414 (6863): 546.
- Power, K. 1995. *Veiled Desire: Augustine's Writing on Women*. London: Longman and Todd.
- Pring, R. 2000. *Philosophy of Educational Research*. second ed. London: Continuum.
- Prithepaul, S. 2002. Innovative Teaching Methods Paper presented at the *Mini Congress - SMLTSA, KZN Coastal Branch*. Durban,
- Prosser, M. and Trigwell, K. 1999. *Understanding learning and teaching: the experience in higher education*. Buckingham: SRHE and Open University Press.
- Pujol, J. 2006. Myelination of Language-Related Areas in the Developing Brain. *Neurology*, 66: 339 -343.
- Rakoczy, S. 2000. Living Life to the Full: Reflections on Feminist Spirituality. In: Kourie, C. and Kretzschmar, L. eds. *Christian Spirituality in South Africa*. Pietermaritzburg: Cluster Publications.
- Ralph, E. H. 2000. The Mind Within the Net: Models of Learning, Thinking and Action. *The American Journal of Psychiatry*, 157 (5): 842.
- Ramsden, P. 1992. *Learning to Teach in Higher Education*. London: Routledge
- Reed, S. 1973. *Psychological Processes in Pattern Recognition*. New York: Academic Press.
- Reis, H. J., Guatimosim, C., Paquet, M., Santos, M., Ribeiro, F. M., Kummer, A., Schenatto, G., Salgado, J. V., Vieira, L. B., Teixeira, A. L. and Palotas, A. 2009. Neuro-Transmitters in the Central Nervous System & their Implication in Learning and Memory Processes. *Current Medicinal Chemistry*, 16 (7): 796 -840.
- Reto, H., Ghilardi, M. F., Marcello, M. and Giulio, T. 2004. Local sleep and learning. *Nature*, 430 (6995): 78.
- Richard, J. C., Kewei, C., Wendy, L., Gene, E. A. and Eric, M. R. 2008. Correlating Cerebral Hypometabolism With Future Memory Decline in Subsequent Converters to Amnesic Pre-Mild Cognitive Impairment. *Archives of Neurology*, 65 (9): 1231.
- Richardson, L. 2000. Writing- A method of inquiry. In: Denzin, N. K. and Lincoln, Y. eds. *Handbook of Qualitative Research*. Thousand Oaks CA: Sage Publications, 923 - 948.
- Rieber, L. P. 2001. Designing Learning Environments that excite serious play. Paper presented at the *Annual Meeting of the Australasian Society for Computers in Learning in Tertiary Education*. Melbourne, Australia,

- Rieber, L. P. and Matzko, M. J. 2001. Serious design of serious play in Physics. *Educational Technology*, 41 (1): 14 -24.
- Riley, G. 1997. Words and Deeds: Jesus as Teacher and Jesus as Pattern of Life. *The Harvard Theological Review*, 90 (4).
- Riley, T. and Hawe, P. 2005. Researching practice: the methodological case for narrative inquiry. *Health Education Research*, 20 (2): 226 -236.
- Rilke, R. M. 1975. Love and Other Difficulties. In: Mood, J. J. L. ed. New York: W.W.Norton, 30 -31.
- Robinson, K. and Aronica, L. 2009. *The Element - How finding your passion changes everything*. London: Penguin Books.
- Rogers, C. and Freiberg, H. J. 1993. *Freedom to Learn*. New York: Merrill.
- Rogers, L. J. 1993. The Molecular Neurobiology of Early learning, development, and Sensitive Periods, with Emphasis on the Avian Brain. *Molecular Neurobiology*, 7: 161- 187.
- Rolheiser, R. 1998. *Seeking Spirituality - Guidelines for a Christian Spirituality for the Twenty-First Century*. London: Hodder and Stoughton.
- Ronald, L. D. 2005. Olfactory Memory Formation in Drosophila: From Molecular to Systems Neuroscience. *Annual Review of Neuroscience*, 28: 275.
- Rose, S. 2005. *The Future of the Brain: The Promise and Perils of Tomorrow's Neuroscience*. New York, NY: Oxford University Press.
- Rose, S. P. and Fischer, K. W. 1998. Growth Cycles of Brain and Mind. *Educational Leadership*, 56 (3): 56-60.
- Ross, C. A. 2006. Brain self-repair in psychotherapy: implications for education. In: Johnson, S. and Taylor, K. eds. *The Neuroscience of Adult Learning: New Directions for Adult and Continuing Education*. San Francisco, CA: Jossey-Bass.
- RSV. 1975. *The Bible*. Great Britian: Collins Clear-Type Press.
- Rubin, H. J. and Rubin, I. S. 2005. *Qualitative Interviewing - The Art of Hearing data*. 2nd ed. London: Sage Publications Inc.
- Russ, P. 2001. Cooperative learning instructional activities in a capstone design course. *JOURNAL OF ENGINEERING EDUCATION*, 90 (3): 413.
- Ryan, T. ed. 2004. *Reclaiming the Body in Christian Spirituality*. New York: Paulist Press.
- Sacks, O. 1990. *Awakenings*. New York: Vintage Books.

Samaras, A. P. 2011. *Self-study teacher research: Improving your practice through collaborative inquiry*. Thousand Oaks, CA: Sage Publications.

Samuel, R. C., Ulrich, M., Andrew, D. B., Luke, C. and et al. 2006. Neurochemical Modulation of Response Inhibition and Probabilistic Learning in Humans. *Science*, 311 (5762): 861.

SAQA. May 2000. *The National Qualifications Framework and Curriculum Development*. Pretoria: SAQA.

Sarton, M. 1993. *Collected Poems 1930 - 1993*. New York: W.W.Norton & Company, Inc.

SASSE. 2010. *Institutional Report: Durban University of Technology*. Bloemfontein:

Saunders, A. D. and Vawdrey, C. 2002. Merging Brain Research with Educational Learning Principles. *Business Education Forum*, 57 (1): 44-46.

Schandry, R., Sparrer, B. and Weitkunat, R. 1986. From the heart to the brain: a study of heartbeat contingent scalp potentials. *International Journal of Neuroscience*, 30: 261-275.

Schiff, M. 1994. *The Memory of Water*. Great Britain: Thorsons.

Schon, D. 1983. *The Reflective Practitioner*. . New York: Basic Books.

Schon, D. A. 1983. *The Reflective Practitioner*. USA: Basic Books.

Schuerholz, L. J., Harris, E. L., Baumgardner, T. L., Reiss, A. L., Freund, L. S., Church, R. P., Mohr, J. and Denckla, M. B. 1995. An analysis of two discrepancy-based models and a processing-deficit approach in identifying learning disabilities. *Journal of Learning Disabilities*, 28 (1): 18-29.

Schulte, A. K. 2009. *Seeking Integrity in Teacher Education - Transforming Student Teachers, Transforming My Self*. New York: Springer.

Schulte-Korne, G., Ludwig, K. U., el Sharkawy, J., Nothen, M. M., Muller-Myhsok, B. and Hoffmann, P. 2007. Genetics and Neuroscience in Dyslexia: Perspectives for Education and Remediation. *Mind, Brain, and Education*, 1 (4): 162-172.

Scott, I., Yeld, N., & Hendry, J. 2007. *A case for improving teaching and learning in South African Higher Education: Higher Education Monitor*. Pretoria: The Council on Higher Education.

Seppelt, R., Fath, B., Burkhard, B., Fisher, J. L., Gret-Regamey, A., Lautenbach, S., Pert, P., Hotes, S., Spangenberg, J., Verburg, P. H. and Van Oudenhoven, A. P. E. 2012. Form follows function? Proposing a blueprint for ecosystem service assessments based on reviews and case studies. *Ecological Indicators*, 21: 145-154.

- Shekerjian, D. 1990. *Uncommon Genius: How Great Ideas are Born*. . London: Penguin.
- Shenton, A. K. 2007. Viewing information needs through a Johari Window. *Reference Services Review*, 35 (3): 487 - 496.
- Shigeru, K. 2002. Ready to unlearn. *Nature*, 416 (6878): 270.
- Shore, R. and Strasser, J. 2006. Music for Their Minds. *Young Children*, 61 (2): 62-67.
- Siegel, D. 2008. Reflections on the Mindful Brain. In: Goleman, D. ed. *Measuring the immeasurable: the scientific case for spirituality*. Boulder, CO: Sounds True, Inc.
- Sienaert, E. 1990. Marcel Jousse: The Oral Style and the Anthropology of Gesture. *The Oral Tradition*, 5 (1): 91-106.
- Silva, A. J. 2007. The Science of Research: The Principles underlying the discovery of cognitive and other biological mechanisms. *Journal of Physiology*, Paris 101: 203 - 213.
- Simon, R., Joseph, L., Anthony, Z. and Roberto, M. 2005. Postsynaptic Receptor Trafficking Underlying a Form of Associative Learning. *Science*, 308 (5718): 83.
- Singer, M. 1995. Qualitative Research as Seen From a Batesonian Lens. *The Qualitative Report*, 2 (2).
- Skinner, B. F. 1973. *Beyond Freedom and Dignity*. London: Penguin.
- Small, J. P. 1999. *Wax Tablest of the Mind: Cognitive studies of memory and literacy in classical antiquity*. London and New York: Routledge.
- Smith, M. K. 1999. 'Learning Theory', *the encyclopedia of informal education*. www.infed.org/biblio/b-learn.htm. (Accessed 2006/02/22).
- Smuts, J. C. ed. 1999. *Holism an Evolution*. Sherman Oaks, California: Sierra Sunrise Publishing.
- Sousa, D. A. 2006. How the Arts Develop the Young Brain. *School Administrator*, 63 (11): 26.
- Sparks, A. and Tutu, M. A. 2011. *Tutu - The Authorised Portrait*. Johannesburg: Pan Macmillan South Africa.
- Stanton, G. 2002. *The Gospels and Jesus*. New York: Oxford University Press Inc.,.
- Steven, E. H. 2005. Addiction: A Disease of Learning and Memory. *The American Journal of Psychiatry*, 162 (8): 1414.
- Steven, J. T. 2007. Incorporating Online Auction Selling in an Agribusiness Capstone

Course. *NACTA Journal*, 51 (1): 26.

Stewart, L. and Williamson, A. 2008. What Are the Implications of Neuroscience for Musical Education? *Educational Research*, 50 (2): 177-186.

Stickgold, R., Hobson, J. A., Fosse, R. and Fosse, M. 2001. Sleep, learning, and dreams: Off-line memory reprocessing. *Science*, 294 (5544): 1052.

Stoller, P. 1997. *Sensuous Scholarship*. Philadelphia, Pennsylvania: University of Pennsylvania.

Straham, D. B. and Toepfer, C. F., Jr. 1983. The Impact of Brain Research on the Education Profession: Agents of Change. *Journal of Children in Contemporary Society*, 16: 219-233.

Strother, M. A. 2007. A Mind for Adventure. *Reclaiming Children and Youth: The Journal of Strength-based Interventions*, 16 (1): 17-21.

Sylwester, R. 1983. The Neurosciences and the Education Profession: Inserting New Knowledge of a Child's Developing Brain into an Already Well-Developed School. *Journal of Children in Contemporary Society*, 16: 1-8.

Sylwester, R. 1986. Dramatic Developments in the Neurosciences Challenge Educators. *OSSC Report*, 26 (3): 1-4.

Sylwester, R. 1986. Learning about Learning: The Neurosciences and the Education Profession. *Educational Horizons*, 64 (4): 162-167.

Sylwester, R. 1993. What the Biology of the brain Tells us about Learning. *Education Leadership*.

Sylwester, R. 1995. *A Celebration of Neurons: An Educator's Guide to the Human Brain*. Alexandria V. A: Association for Supervision Curriculum Development.

Sylwester, R. 2002. The Downshifting Dilemma: A Commentary and Proposal. Available: www.newhorizons.org/neuro/ylwester2.htm (Accessed 2006/02/22).

Taylor, M. F. 1976. *A Time to Dance*. Austin: Sharing.

Taylor, P. C. and Afonso, E. 2009. Critical autoethnographic inquiry for culture-sensitive professional development. *Reflective Practice*, 10 (2).

Taylor, P. C. and Settelmaier, E. 2003. Critical Autobiographical Research for Science Educators. *Journal of Science Education japan*, 27 (4): 233-244.

TEE College. 2005. *Reading the Faith through Women's Eyes workbook 3 of 4*. Turffontein, South Africa: Theological Education by Extension College.

TEEC. 2004. *Growing Spiritually, Thinking Theologically. Workbook 2 of 4*. Turffontein: TEE College.

- TEEC. 2004. *Growing Spiritually, Thinking Theologically. Workbook 3 of 4.* Turffontein: TEE College.
- TEEC. 2004. *Growing Spiritually, Thinking Theologically. Workbook 4 of 4.* Turffontein: TEE College.
- TEEC. 2005. *Reading The Faith Through Women's Eyes. Workbook 2 of 4.* Turffontein: TEE College.
- TEEC. 2005. *Teaching the Faith - Workbook 3 of 3* Turffontein: TEE College.
- TEEC. 2005. *Teaching The Faith. Workbook 3 of 3.* Turffontein: TEE College.
- Thompson, R. F. 1994. Behaviorism and Neuroscience. *Psychological Review*, 101 (2): 259-265.
- Tidwell, D., Heston, M. and Fitzgerald, L. eds. 2009. *Research Methods for the Self-Study of Practice* Springer.
- Timm, D. 2002. "Chemistry is a Gas" Board Game. *ELC News* magazine.
- Timm, D. 2004. Use of Games as Learning Material. Paper presented at the *South African Academic Development Association (SAADA) Conference*. Cape Town,
- Timm, D. 2005. The evaluation of the Augmented Programme for ND Analytical Chemistry at the ML Sultan Technikon for the period 1994-1999 MSC, UNISA.
- Toni, N., Buchs, P. A., Nikonenko, I., Bron, C. R. and Muller, D. 1999. LTP promotes formation of multiple spine synapses between a single axon terminal and a dendrite. *Nature*, 402 (6760): 421.
- Trafford, V. and Leshem, S. 2008. *Stepping Stones to Achieving your Doctorate*. Berkshire, England: Open University Press.
- Trisha, G. 2005. Big plans for little brains. *Nature*, 435 (7046): 1156.
- Tye, K. 2006. The Brain and Learning: Resources for Religious Educators. *Religious Education*, 101 (1): 124-128.
- Ullen, F. 2005. Extensive Piano Practicing Has Regionally Specific Effects on White Matter Development. *Nature Neuroscience*, 8: 1148 -1150.
- Vahed, A. 2008. The Tooth Morphology Board Game: An innovative strategy in Tutoring Dental Technology Learners in Combating Rote Learning. In: *Proceedings of 2nd European Conference on Games-Based Learning 16-17 October*. Universitat Oberta de Catalunya, Barcelona, Spain, 467-479
- van Maanen, J. 1988. *Tales of the Field - on writing ethnography*. Chicago: The University of Chicago.

Varma, S., McCandliss, B. D. and Schwartz, D. L. 2008. Scientific and Pragmatic Challenges for Bridging Education and Neuroscience. *Educational Researcher*, 37 (3): 140-152.

Varma, S. and Schwartz, D. L. 2008. How Should Educational Neuroscience Conceptualise the Relation between Cognition and Brain Function? Mathematical Reasoning as a Network Process. *Educational Research*, 50 (2): 149-161.

Walford, J. B. 2009. Autoethnography as method. *Choice: Current Reviews for Academic Libraries*, 46 (7): 1362-1362.

Walhovd, K. B. and Fjell, A. M. 2007. White Matter Volume Predicts Reaction Time Instability. *Neuropsychologia*, 45: 2277-2284.

Walleczek, J. 1993. Bioelectromagnetics: The Question of Subtle Energies. *Noetic Sciences Review*, 28 (Winter): 33-36.

Warren, R. 2002. *The Purpose Driven Life - What on earth am I here for?* Grand Rapids Michigan: Zondervan.

Wenger, E. 1999. *Communities of Practice. learning, meaning and identity.* Cambridge: Cambridge University Press.

Wenger, E., McDermott, R. and Snyder, W. 2002. *Cultivating Communities of Practice.* Boston, Massachusetts: Harvard Business School Press.

West, G. 1993. *Contextual Bible Study.* Pietermaritzburg: Cluster Publications.

West, G. 2012. Here am I Lord, send me. Diocese of Natal, Anglican Church of Southern Africa, Pietermaritzburg.

Whitehead, J. 2004 What counts as evidence in the self-studies of teacher education practice? In Loughran, Hamilton, LaBoskey & Russell (eds). *International Handbook of Self-Study of Teaching and Teacher Education.* Dordrecht: Kluwer

Whitehead, J. 2008. *Action Planning in Improving Practice and Generating Educational Knowledge in Creating Your Living Educational Theory.* Available: <http://actionresearch.net/writings/jack/arplanner.htm> (Accessed 02 February 2010).

Whitehead, J. 2008. *Combining Voices In Living Educational Theories That Are Freely Given In Teacher Research. Notes for the Keynote presentation for the International Conference of Teacher Research on Combining Voices in Teacher Research.* Available: <http://www.jackwhitehead.com/aerict08/jwict08key.htm> (Accessed 25 September 2009).

Whitehead, J. 2009. How Do I Influence the Generation of Living Educational Theories for Personal and Social accountability in Improving Practice? Using a Living Theory Methodology in Improving Educational Practice In: Tidwell, D. H., Melissa; Fitzgerald, Linda ed. *Research Methods for the Self-Study of Practice.* Springer.

Whitehead, J. 2009. Justifying the use of a living theory methodology in the creation of your living educational theory. Responding to Cresswell. University of Bath, 14 June. Available: <http://www.actionresearch.net/writings/arsup/Cresswellqualitativemethods.htm> (Accessed 14 June 2009).

Whitehead, J. 2009. Using a living theory methodology in improving practice and generating educational knowledge in living theories. *Educational Journal of Living Theories*, 1 (1): 103 - 126.

Whitehead, J. 2010. *Action Planning In Improving Practice and Generating Educational Knowledge In creating Your Living Educational Theory*. Available: <http://actionresearch.net/writings/jack/arplanner.htm> (Accessed 02 February 2010).

Whitehead, J. 2010. Jack Whitehead's Reflections following a workshop, on action research and living educational theory, and individual conversations at Durban University of Technology between the 8th-12th December 2009. How Can We Enhance Our Contributions to Educational Knowledge with Self-Studies for Transformative Higher Education (SeStuTHE)? . University of Bath.

Whitehead, J. 2011. *Action Research : What is a Living Educational Theory Approach to Action Research and a Human Existence?* Available: <http://actionresearch.net> (Accessed 25 January 2012)

Whitehead, J. 2011. How do I improve what I'm doing? Living Educational Theory for the African Context. . Paper presented at the *Workshop on Alternative Research Paradigms and Indigenous Knowledge Production*. Africa Development Centre, Covenant University, Nigeria, 14th to 17th February, 2011.

Whitehead, J. and Huxtable, M. 2008. The Catalytic Validity of the Living Educational Theories of Self-Study Researchers in Improving Practice and in Creating a New Epistemology of Educational Knowledge. In: Russell, T. ed. *Proceedings of 7th International Conference on S-STEP*. Herstmonceux Castle, UK,

Whitehead, J. and Huxtable, M. 2010. Educational Knowledge and Forms of Accountability within the Complex Ecologies of Self-Study. In: Russell, T. ed. *Proceedings of 8th International Conference on S-STEP*. Herstmonceux Castle, UK, 277 - 281

Williams, D. L. 2008. What Neuroscience Has Taught Us about Autism: Implications for Early Intervention. *Zero to Three*, 28 (4): 11-17.

Willingham, D. 2008. When and How Neuroscience Applies to Education. *Phi Delta Kappan*, 89 (6): 421-423.

Willis, J. 2007. Brain-Based Teaching Strategies for Improving Students' Memory, Learning, and Test-Taking Success. *Childhood Education*, 83 (5): 310.

Willis, J. 2007. The Gully in the "Brain Glitch" Theory. *Educational Leadership*, 64

(5): 68-73.

Willis, J. 2008. Building a Bridge from Neuroscience to the Classroom. *Phi Delta Kappan*, 89 (6): 424-427.

Wilson, E. 2004. Gut Feminism. *Differences: A Journal of Feminist Cultural Studies*, 15 (3): 66-94.

Wilson, E. 2004. *Psychosomatic: Feminism and the neurological body*. Durham, NC & London: Drake University Press.

Wilson, G. and Richard, M. 2003. Practice doesn't make perfect. *Nature*, 423 (6941): 696.

Wolfe, P. 1998. Revisiting Effective Teaching. *Educational Leadership*, 56 (3): 61-64.

Wolfe, P. 2006. The Role of Meaning and Emotion in Learning. In: Johnson, S. and Taylor, K. eds. *The Neuroscience of Adult Learning: New Directions for Adult and Continuing Education*. San Francisco, CA: Jossey-Bass, 35 - 41.

Wolfe, P. and Brandt, R. 1998. What Do We Know from Brain Research? *Educational Leadership*, 56 (3): 8-13.

Wuller, C. A. 2010. A Capstone Advanced Pharmacy Practice Experience in Research. *American Journal Of Pharmaceutical Education*, 74 (10): 1.

Xenophon. 1897. *Oeconomicus [The Economist]- A Treatise on the Science of the Household in the form of a Dialogue*. Adelaide South Australia: eBooks@Adelaide.

Zander, B. 2009. *Classical Music with shining eyes* Available: http://www.ted.com/talks/lang/eng/benjamin_zander_on_music_and_passion.html (Accessed 5 June).

Zohar, D. 1991. *The Quantum Self*. Glasgow: Flamingo.

Zohar, D. and Marshall, I. 1994. *The Quantum Society*. New York: Quill.

Zull, J. E. 2002. *The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning*. Sterling, VA: Stylus.

Zull, J. E. 2006. Key Aspects of How the Brain Learns. In: S. Johnson, S. and Taylor, K. eds. *The Neuroscience of Adult Learning: New Directions for Adult and Continuing Education*. . San Francisco, CA: Jossey-Bass.

APPENDICES

Appendix A: Template of consent form

Durban University of Technology

INFORMED CONSENT BY SUBJECTS TO PARTICIPATE IN A RESEARCH PROJECT

Preamble	Isandulelo
<p>The university and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This form and the information that it contains are given to you for your own protection and full understanding of the procedures. Your signature on this form will signify that you have been informed about the procedures and the benefits of this research project, that you have had adequate opportunity to consider the information communicated to you, and that you voluntarily agree to participate in the project. Any information that is obtained during this study will be used as per the agreement, viz. that it will be documented in a thesis for scholarly purposes, and for public information, where relevant and applicable, and only with your prior consent.</p> <p>*****</p>	<p>Inyuvesi nalabo abenza ucwaningo bazibophezele kwimigomo yokuziphatha okwamukelekile nokuvikela amalungelo ngaso sonke isikhathi, izifiso ,ukwaneliseka nokuphepha kwalabo abazoba yingxenyeyocwaningo. Lelifomu neminingwane ekulo inikezelelwe kuwe ngenhloso yokukuvikela nokukwazisa ngenqubo-mgomo. Ukusayina kwakho leli fomu kuyindlela yokukhombisa ukuthi unolwazi ngenqubo- mgomomenzuzo yalolu cwaningo nokuthi ubenethuba elanele lokuqondisisa ulwazi oludluliselwe kuwe, futhi uzivumele ngokwakho ukuba yingxenyeyalolu cwaningo. Noma yiluphi ulwazi olutholakele kulo cwaningo luyosetshenziselwa ekubhaleni ibhukwana elizosiza abanye abafundi nokwandisa ulwazi lomphakathi njengokwesivumelwamo nangokwemvume yakho.</p> <p>*****</p>

<p>Consent Form</p> <p>Having been asked by</p> <p>...Delysia Timm.....</p> <p>of the Department of Education at the Durban University of Technology</p> <p>to participate in a research project, I have discussed and understood the procedures which will take place.</p> <p>I understand that the procedures to be used in this study and personal risks in taking part.</p> <p>I understand that I</p> <p>.....</p> <p>may withdraw from participating in this study at any time, even if I sign this consent.</p> <p>I also understand that I may register any concern that I may have about the study with the researcher named above or with Prof. Joan Conolly (cel phone number: 083 2949 607.) I may obtain copies of the results of this study by contacting</p> <p>...Delysia Timm.....</p>	<p>Ifomu lezivumelwamo</p> <p>Njengoba ngicelwe u:</p> <p>..... Delysia Timm</p> <p>Department of Education e Durban University of Technology</p> <p>Ukuba abambe iqhaza ocwamingweni oluchazwe ngenhla. Ngiyayiqonda inqubomgomo ezolandelwa kulolucwamingo.</p> <p>Ngiyaqonda ukuba</p> <p>.....</p> <p>.....</p> <p>noma nini noma sengisayenile leli fomu. Ngiyakuqonda futhi ukuthi ngingazwakalisa ukukhathazeka kwami ngololucwaningo kumcwaningi obhalwe ngenhla noma ku Solwazi u Joan Conolly (cel. no. 0832949607)</p> <p>Ngingathola isishicilelo semiphumela yalolu cwano ngokuthintana no:</p>
--	--

cel phone number ...0835950183

..... Delysia Timm

I understand that the information gathered for this study is intended for public access and possible inclusion in school curricula. By signing this form, I am acknowledging that I understand the contents of this document.

.....

Ku cell namba; 0835950183.....

Name :

Ngiyakuqonda futhi ukuthi ulwazi oluqoqwe kulolu cwaningo luhlelwe ukusetshenziswa ngumphakathi nanokuthi lufakwe ohlelweni lokufundisa ezikolweni.

Address:

.....

Ngokusayina leli fomu, ngivuma ukuthi ngiyakuqonda okuqokethwe yileli bhukwana

Signature:

Igama:

Witness:

Ikheli:

Date:

.....

.Sayina :

Ufakazi:

Usuku:

Appendix B: Schedule of Participants (SOP).

Who did I interact with as part of my data generation?

No.	Name	Date	Topic Question	Type of Interaction	Nature of record	Duration in minutes
1	Delysia	November 2011	How do I teach during my sermons in Church?	Sermon	video	25:05 (full) 4:12 (clip)
2	Anton	March 2011	What is my educational/spiritual influence on you?	Questionnaire	written	
3	Fr Terry & Rita	March 2011	What is my educational/spiritual influence on you?	Skype Conversation	audio	14:45
4	Faith	March 2011	What is my educational/spiritual influence on you?	Skype Conversation	audio	10:34
5	Delysia	December 2009	How does liturgical dance influence my spirituality? http://www.youtube.com/watch?v=S7schvtPNOk&feature=youtu.be	Liturgical Dance	video	4:44
6	Charys	March 2011	What is my educational/spiritual influence on you?	Questionnaire	written	
7	Heidi	March 2011	What is my educational/spiritual influence	Questionnaire	written	

			on you?			
8	Lola	March 2011	What is my educational/spiritual influence on you?	Questionnaire	written	
9	Dawn	March 2011	What is my educational/spiritual influence on you?	Questionnaire	written	
10	Hylton	March 2011	What is my educational/spiritual influence on you?	Questionnaire	Written	
11	Fiona	March 2011	What is my educational/spiritual influence on you?	Questionnaire	Written	
12	Des	March 2011	What is my educational/spiritual influence on you?	Questionnaire	Written	
13	Judy	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	
14	Joy	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	
15	Alice	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	
16	Cheryl	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	
17	Lorraine	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	

18	Des	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	
19	Linda	July 2012	What is my educational/spiritual influence on you?	Questionnaire	Written	
20	Joan	April 2010	What is my educational/spiritual influence on you?	Letter	Written	
21	Marge	July 2012	What is my educational/spiritual influence on you?	Questionnaire	written	
22	Delysia	March –Sept 2001	How do I facilitate workshops? http://www.youtube.com/watch?v=1zku3e7qE8Q	Workshop facilitation	video	5:24 (clip)
23	Keith	August 2011	What do you want to tell me about why you specifically compiled a video of me in workshops?	Email conversation	written	
24	Delysia	September 2001	How do I present at a Symposium? http://youtu.be/-bk97Q3w8Do	Symposium presentation	video	36:49
25	Delysia	February 2009	How do I facilitate workshops? http://youtu.be/qi1W2cKTMpE	Workshop facilitation	video	27:35
26	Academic staff	September 2009	What were your feelings and changes experienced when using games for learning?	Focus group discussion	audio	53:30

27	Sherlien	July 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using games for learning, teaching and assessment?	conversation	audio	22:16
28	Sherlien	September 2001	How do you present your games that you have developed? http://youtu.be/qi1W2cKTMpE	Presentation at symposium	Video	8:38
30	Ingrid	May 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using for learning, teaching and assessment?	Conversation	Audio	24:12
31	Ingrid's 4 th year Homeopathy students	June 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions– of using games for learning, teaching and assessment?	questionnaire	written	
32	Ivan	July 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using games for learning, teaching and assessment?	Conversation	audio	35:36

33	Derrick	July 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using games for learning, teaching and assessment?	conversation	audio	15:24 &11:37
34	Dorinda	July 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using games for learning, teaching and assessment?	conversation	audio	39:26
35	Dorinda's 3 rd year Somatology students	July 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using for learning, teaching and assessment?	questionnaire	written	
36	Dorinda's 3 rd year Somatology students	July 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions – of using games for learning, teaching and assessment?	Focus group conversation	audio	12:05
37	Anisa	June 2009	What would you like to tell me about your	conversation	audio	44:41

			experience – your feelings, thoughts and emotions- of using games for learning, teaching and assessment?			
38	Anisa's 2 nd year Dental Technology students	June 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions- of using games for learning, teaching and assessment?	questionnaire	written	
39	Anisa's 3 rd year Dental Technology students	June 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions- of using games for learning, teaching and assessment?	questionnaire	written	
40	Anisa's 4 th year Dental Technology students	June 2009	What would you like to tell me about your experience – your feelings, thoughts and emotions- of using games for learning, teaching and assessment?	questionnaire	written	
41	Delysia	November 2009	Risk of being Oneself in Higher Education: Heltasa Conference presentation	Conference presentation	Video	7: 49 mins(clip)

			https://www.youtube.com/watch?v=Ei7w9F4a1xw			
42	Jack Whitehead & Joan Conolly	December 2009	What is my doctorate study all about? http://www.youtube.com/watch?v=O2uTcxZtYcw	conversation	Video	6.44
43	Delysia	July 2010	Towards an Understanding of the Biochemical nature of learning. http://youtu.be/Ei9QLgTsXWg	Seminar conversation	Video	24:52
44	Delysia	April 2012	How Am I Transformed as a Higher Education Practitioner-Researcher through Self-Study? http://www.youtube.com/watch?v=V48I2BB7Bj4	Symposium conversation	video	4:23 – 7:04 mins 35:49 – 45:08 minutes

Appendix C: Written responses of the participants

P.O. Box 1336

Kloof 3640

7.4.2010

Dear Delysia

We were very privileged to be able to attend the Quiet Morning which you conducted on Maundy Thursday.

It was a wonderful, Spirit filled, Morning as we reflected on the women who had been with Jesus from his birth to his Crucifixion. Thank you for all that you did to make it such an inspiring morning. I am just sorry that time did not allow for some of us to stay and enjoy some Fellowship afterwards.

With our prayers and best wishes to you as you continue to serve God.

Love



Joan Uys - A.W.F. Regional President.

1. With Delysia leading the bible study group, I grew to learn about the teachings and lessons in the bible in a casual yet real and meaningful way. There were times that I questioned my knowledge or rather lack of it, repeatedly voiced my opinions and ideas about my understanding of what was being discussed, Delysia always welcomed the questions and comments. I was allowed to have my opinions but gently led to 'see' God's reasoning and His meaning in my life. I grew to enjoy bible lessons because it allowed me a sense of freedom to challenge and learn with a deep and meaningful understanding.

2. I think by my constant questions and personal issues, you grew with me. You listened quietly and allowed God to lead you to lead me and help carry me through the difficult and uneasy problems that I experienced. I think by putting yourself at my disposal, you helped me and in turn you grew to become more selfless, accommodating and a guiding hand to where we both should be.

3. There were many instances when I needed a healing hand, a supportive shoulder or just a friend, Delysia will always be the person I would go to for prayer or just to

vent my feelings.
When I became pregnant which was only by the grace of God, at 16 weeks tests revealed that the baby could be suffering from Down's Syndrome. I went for prayer not able to utter a word because my pain was so intense, I was so angry at God for giving me this opportunity to be pregnant and then to be given these test results. Delaysia sensed my pain and hurt and prayed, my baby was born perfect!

I had family problems with my mum and brothers and needed someone to understand the disappointment and hurt my husband and I went through. I needed Delaysia to 'see' the pain and injustice, she never judged either my family or me, but gave me good, solid advice, never showing bias to one or the other.

When my husband broke his leg in 2008, it was Kelvin and Delaysia who visited not as home-cell leaders but as friends.

My mum suffered a heart attack in 2009. We spent the entire day in hospital worried and frightened - we came home to a meal for my entire family, prepared and cooked by Kelvin and Delaysia. Delaysia's not just a leader in church, she has shown us all that God's love lives

through his children. Delysia's love for
God is so evident in all the deeds
and help she shares.

D Tech – Education Study – DN Timm

Research Participant Questions

Please can you respond to the following questions:

1. To what extent and how did I influence your learning during our time as members of bible study group?
2. To what extent and how did you influence my learning during our time as members of bible study group?
3. Can you describe the emotions you experienced during these learning moments giving instances or examples as appropriate.

Thank you.

QUESTION 1

As someone who first needs head knowledge before the spiritual truth becomes heart knowledge, I really appreciated Delysia's sound and extensive knowledge of Scripture. She is able to explain spiritual issues in a down to earth and easy to understand way without quoting Christian platitudes. It is important for me to go to a bible study and learn new things and this wish has been fulfilled in Delysia's group.

I have become more accepting of other's thoughts and attitudes. When members of the bible study ask what I consider to be a really daft question, Delysia answers them with respect and insight. Everyone is at a different stage in their spiritual journey and our bible study group caters for everyone.

Delysia gives members of the bible study turns to present the material. This has helped me a great deal and I thoroughly enjoy being given the opportunity to research and pray about the forthcoming bible study.

QUESTION 2

This question is almost impossible to answer. How can I second guess Delysia? What she may have learnt from me is how to deal with a loud, opinionated person. (And she does it so well!) The bible study group consists of such a variety of members which I think has stretched Delysia's pastoral and teaching skills.

QUESTION 3

I am excited when I learn something new or a confusing section of the Bible falls into place. Delysia often gives us a challenge or something to think about during the week and this guides me during quiet times. God, in his immense and incomprehensible goodness, often gives answers in the Scripture I read after the bible study. This builds my faith.

From: Lola Prior [mailto:lola.prior@yahoo.com]
Sent: 26 January 2012 03:34 PM
To: Delysia Norelle Timm
Subject: questionnaire

Here are my responses to your three questions:

1. Delysia is a very encouraging and inspiring person. She has influenced the dance for joy group greatly with her commitment to the group as well as with her involvement in the group. As a member of the dance for joy group we looked to her for continued inspiration and motivation, of which she always gave so abundantly.

2. Being part of a worship group, I see ourselves as playing a supportive role in each others lives. Looking to each other for advice in times of need, friendship and daily encouragement. All of which we share with each other and thus influencing each others lives in a positive way.

3. The emotions I experienced during these learning moments would be one of joy and happiness. This is because the outcome of our worship and time spent together was always uplifting to others and pleasing to God.

● **Heidi Bussy Traut – from Facebook**

○ Wow, really difficult having to think back through to a year ago.

1. You shared joy and your love of the Lord which helped me to see it too.
2. ??? Maybe I shared my laughter and sense of the ridiculous and shared that perfection is not necessary. What is important is trying and joy
3. Lots of laughing all the time and just enjoying the dance. You showed your love for the Lord in not holding back when you danced and not being self conscious. You were always willing and eager to dance in other places and didn't care what others thought

Best wishes
love and God bless
Heidi

**Revd. Hylton Regis Hardie
Parish of St Augustine's
Anglican Church
PO Box 39781
QUEENSBURGH
4070**

**D Tech – Education Study – DN Timm
To whom it may concern**

- 1. As an amateur flower arranger I am always amazed by Delysia Timm's approach to a floral display. The flow, thought and theme plays a very important part in her approach to an arrangement. Delysia's use of fabric in the background gives life and is very prominent in bringing out the flowers she uses.**
- 2. The extent of my approach to your floral arrangements when we have worked as a team for religious festivals was your ability to co-operate with the team and blend in colour, themes and take constructive criticism.**
- 3. I participate in the Pavilion Flower Show each year and Delysia always makes time to walk through the show to enjoy the various themes and to discuss with me her views and joys of the displays.**

The great religious festivals always have an impact on our emotions when the church comes alive with the bright floral arrangements at Easter, Christmas, Pentecost and our Patronal Festival.


REVD. HYLTON HARDIE

1. You influenced my learning as a member of the flower panel in showing me more about flower arranging and how the Holy Spirit guides our hands

2. I hope I influenced your learning with some enthusiasm and friendship.

3. Some emotions experienced during these learning moments were lots of laughter, companionship, friendship and also amazement at how the flower arrangements came together and ~~was~~ made the church look so beautiful.

Delysia Norelle Timm

From: Charys Beswick [jcharysb@gmail.com]
Sent: 12 March 2011 11:31 AM
To: Delysia Norelle Timm
Subject: Answers of a sort

Dear Delysia

Here are my answers to your questions. As I am busy with school work they are straight off the top of my head so I do hope they will do. Shall I post the consent form to you as I'm not too good with scanning, etc? It should arrive near your deadline. Remind me of your address please. Hyde Road???

Congratulate Lance on reaching 21!!! And Brian could have done with Evan over the past couple of weeks with his toothache.

Hear that you have a new priest. Brian knew him from St Cyprian's (I think) youth group years ago.

It is warming up here. Promises to be a lovely dry, sunny day today with a high of 12 and low of 8!!!
Better than the -3 to 7 on Monday!
Love to you both.

Charys

1:1 Dance for Joy

You were always

- **Positive**
- **Faithful**
- **Cheerful**
- **Patient**
- **ready to listen**
- **Good at memorising the moves so I could follow (Hal)**

1:2 Bible Study Group

- **From you I learnt what good teaching is all about**
- **Increased my depth of knowledge and faith**
- **Always positive/encouraging**
- **Divergent thinking taking us into thoughts not previously crossed**
- **Kind to all**
- **Whatever I said you made me feel valuable so that I wasn't afraid to voice my opinion**
- **You repeated important points so they would sink in (hopefully!)**
- **Gave me self-confidence so I felt I too could lead if/when necessary**
- **Hospitable**
- **Accepting of differences**

1:3 Flower arrangers panel

- **Taught me the basics**

- Encouraged me
- Constructive criticism
- Made it fun
- Shared ideas
- Gave confidence
- Listened to my thoughts
- Approval

2:1 Dance for Joy

- By being there?
- Hopefully by being a friend

2:2 Bible Study Group

- Attending
- Voicing my opinions

2:3 Flower arrangers panel

- Being encouraging
- Working as a team
- Accepting my opinions

3.

Closer to God with fellow Christians who were able to freely express their faith without holding back.

Lots of joy, laughter, friendship, moments shared which made me feel as though life is all worthwhile.

I can remember that you often helped me to go over dance steps, which as a learner with 'memory difficulties', always baffled me.

Bible Study was always good to attend as, even when really, really tired after a long hard day at school, you always made it fun and useful with practical ideas. In my opinion men, and this may or not be a criticism of male priests and teachers depending upon how you see it, tend to be a little airy fairy in their teachings, whereas you (and other women) always ensured that we went away with something practical in mind.

1. I had the opportunity of attending two Quiet Days, both of which created a sense of fulfillment. I left the meetings with a "completeness" of some sort, almost as if the Holy Spirit reminded me of His presence in my life.

2. When you enter a Quiet Day, you enter alone, you with only you and God on your mind - and you leave with a huge sense of togetherness and a beautiful unity among other women. My experience during Lent gave me such a rich and precious experience. I will always be reminded of the wonderful sense of warmth I received sharing.

3. Having days like this helps redirect and reposition a person. You always know ~~there~~ there's God out there, you even take His coverage of your life for granted, but days like this help bring you back on track to really 'see' Him for His awesomeness and the power of His love. Having Quiet Days creates also an 'unselfishness' side of a person. You don't only focus on 'you', but you 'see' that there are other women who experience pain, hurt even ^{the} death of loved ones - and yet their strength - shows

you that if that person can go on -
then I can too!! Quiet Days are
Growing Days in God!!!

B Theology – Research report

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

- 1) Firstly I would like to say how beautifully and wonderfully you had everything prepared for us. The music was lovely, it put us in the right frame of ~~frame~~ of mind. Especially Mary's Alabaster Box. From my experience it has uplifted me body, mind and soul. I pray that my everyday life can be like that. There's always positive feelings, nothing holds us back. I can praise and worship God with my whole being.
- 2) When women are together, we bring out the best in one another. There's no judging one another. Our faith in God is so great when we are together. Our emotions run free and we can sing praises to our Lord. There's the feeling of the Holy Spirit among us. (Goosebumps). There's also a feeling of oneness and calm.
- 3) Always being there to help one another. Never judging. Being true and good in the Christian faith and beliefs. So others can follow Christ. To give back whenever I can. Amen.
"God is good all the time, All the time God is good."

B Theology – Research report

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

① The Quiet Day made me look at my self and my relationship with God. The time spent in prayer reading my Bible & meditation. From the Quiet day I was able to feel the love, joy and peace spent in his presence.

② Mixing with other women you share your experience and also learn from others. Share one another's joys and sorrows and how to overcome trials and tribulations. To pray for one another and to build a bond of love & unity.

③ When you serve others you serve God. A phone call to someone who is not well can cheer them up. Visiting people in need of prayer and sharing God's word. To be of service to the old and the lonely. The Bible says if you have done the least of these things to my brothers you have done it to me.

B Theology – Research report

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

1. Quiet Days give one the opportunity of withdrawing from ~~the~~ everyday activities and focussing on God → a deepening of my relationship with God
2. From the Quiet Days I have experienced I believe they ^{draw} the women attending closer together. We have all taken the same walk through the discussions and questions of the Quiet Day and we all understand that each of us is trying to deal with them in our own lives.
With regard to the Quiet Days influence ^{on my relationship with} ~~on~~ women who did not attend: I believe that I would want to pass on/share what God has laid on my heart during the Quiet Day.
3. Quiet Days top up / ^{fill} my "spiritual tank" and this, in turn, allows me to let God help me in my relationship ^{with} / service to others

B Theology – Research report

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

1. I have always enjoyed the experience of quiet days which have been varied. They have helped me to meditate which I usually find difficult.
2. After a quiet day I have been able to share the experience with a close friend.
3. Quiet days have encouraged me to regularly get involved in the frail care centre where I live, to get residents involved in art and crafts which is a therapy. To get some dancing and to visit and pray with the sick. Being on the Management Board of a children's home, I realise the spiritual needs of the children are very important.

Jay Ford.

B Theology – Research report

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

① Quiet Days - in prayer is very very soothing to ones inner self. It brings calmness, peace, love and humility. You are having a personal talk with God.

② It brings home the fact, that we as women, are not alone in our way to God. One's spiritual life is taken to another level. You are undisturbed and so are really enjoying this quiet Day.

③ We as christians need to be reminded all the time, about service to others. A thank you - a hello - a smile can make a whole world of difference to someone. It does not cost one anything. Service to humanity is in fact service to God. These experiences enrich you, ^{and} all those around you.

B Theology – Research report

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

- 1) I picture myself at the foot of the cross feeling our Lord Jesus' pain that he went through for me. The presence of holiness all around me. It is a beautiful feeling hard to explain. I get very emotional. I talk to the Lord telling him all my problems; he is the only one that understands.
- 2) I can relate to them in their suffering and speak to them with more feeling and I understand their pain and always encourage them to come to quiet days or even pray in a quiet surrounding as our Lord tells us "be still and know that I am Lord"
- 3) What a awesome feeling only if you ~~be~~ hear his voice through his servant who is administering to us can you understand I feel I can relate to others my experiences and also help them in the struggles of this world

Pp 21 - Ryan: defn spirituality.
Pp 22 -

B Theology - Research report

Pp 24 - recognize the
divine presence of
God embodied in the other!

DN Timm

Research Participant Questions

Please can you respond to the following questions by sharing your own experiences.

Please can you write a few sentences for each question.:

Pp 30 - how we
see our body!

1. What would you like to tell me about your experience of Quiet Days and their influence on your personal spirituality?
2. What would you like to tell me about your experience of Quiet Days and their influence on your (spiritual) relationships with other women?
3. What would you like to tell me about your experience of Quiet Days and their influence on your (spirituality) service to others?

Quiet days are these times set aside for me to be still before the Lord, to listen to his word, to communicate with the Lord thru nature! Quiet days are the hours for me to spend wholly & solely with God as my creator. I am because of God! He made me, He gave me life! I am able to connect to God more fully as thru my vocal days, I have no time to set aside for God; I am unable to worship him in + thru my work, I try but am just not able! After a quiet day I return feeling energized in my whole being! I feel that peace within me that passes all understanding. Thru the sharing experiences among other women I am able to connect more deeply with other women - to celebrate their joys, their pains, their laughter! I am able to discover + discern their Christ light! I feel more compassionate to them as I see the commonness between each of us made in God's image: not hidden & masked by the clothes we wear! As I am energized I do I discover more of my gifts during the quiet day, I am able to be of service to others in meeting them @ their point of need! I can be of service as I use my God given gifts for God's service!

Appendix D: An exemplar of a completed framework for one concern for a lecturer

	Observed by the lecturer	Not observed by the lecturer
Observed by the Academic Developer	<p><i>Expressed concerns</i></p> <p>Sherlien is frustrated at the students lack of learning a vital component, that would need application at higher levels. Sections required memorisation. (survey questions)</p> <p>The students see the section as not relevant, they could not relate.</p> <p>Students need to be active participants in their learning.</p> <p>Learning can be a fun experience</p> <p>Dealing with Emotional issues for students promotes learning</p> <p>Students influenced her to use card games for learning</p>	<p><i>Inferred concerns</i></p> <p>Sherlien interest in the lives of her students leads to successful learning</p> <p>Emotional issues can get in the way of learning</p> <p>She is innovative and caring as a lecturer which is time-consuming</p> <p>She takes risks in her class in using unconventional/innovative methods of teaching</p>
Not observed by the Academic Developer	<p><i>Unexpressed concerns</i></p> <p>All the students in her class must pass the energy and enthusiasm for the students learning</p> <p>Not all students see it as fun and exciting to play card games</p> <p>Not all students can play card games</p>	<p><i>Dormant or delitescent concerns</i></p> <p>Her desire for personal success as a teacher</p> <p>Is the learning using games effective?</p> <p>Do students believe in their own ability to learn?</p>

Appendix E: B Theology Degree curriculum outline

Credits required for completion:

To complete this 364 credit Bachelor of Theology degree you must:

- complete the Fundamental Course - 10 credits (or receive credit for recognition of prior learning);
- complete all six Core courses - 126 credits;
- complete two Elective courses in each of the three academic streams - 144 credits (Working with Sources, Engaging with the Christian Faith, and Applying Theology in Ministry);
- complete a further three Elective courses selected from any of the academic streams - 72 credits;
- in the last year of study, complete the Compulsory course 7401 (Integrating Theology and Ministry) - 12 credits.

If you complete at least four electives in any one academic stream, as well as completing your 7401 academic report in that same stream, then your degree certificate will carry an endorsement in that subject area. Note: this is not the same as a "major"!

Courses on the B.Th Programme:

Fundamental Course

	Credits	Level of difficulty
7000 Developing Skills for Theological Study	10	Introductory

Core Courses

	Credits	Level of difficulty
7002 Engaging with people pastorally and ethically	22	Introductory
7003 Growing spiritually; thinking theologically	24	Introductory
7004 Interpreting Texts: Bible and other sources	30	Introductory
7005 Practising Christian Leadership and Management	12	Intermediate
7006 Facilitating a Christian response to HIV and Aids	12	Intermediate
7001 Doing Ministry for a Change	26	Advanced

Electives

Working with Sources	Credits	Level of difficulty
7103 Working with Old Testament Texts & Contexts 1	24	Intermediate
7104 Working with Old Testament Texts & Contexts 2	24	Advanced
7122 Working with New Testament Texts & Contexts 1	24	Intermediate
7131 Working with New Testament Texts & Contexts 2	24	Advanced
7155 Exploring our Christian Foundations	24	Intermediate
7156 Exploring Christian growth and change	24	Intermediate
7157 Exploring our Christian Contemporary Heritage	24	Intermediate
7158 Exploring our African Christian World	24	Advanced
Engaging with the Christian Faith		
7243 Wrestling with our Faith	24	Intermediate
7276 Journeying in Faith	24	Intermediate
7261 Living and Ethical Faith	24	Intermediate
7245 Discovering our Christian World	24	Advanced
7281 Working with other Faiths	24	Advanced
Applying Theology in Ministry		
7372 Proclaiming our Faith	24	Intermediate
7373 Celebrating our Faith	24	Intermediate
7375 Caring in Faith	24	Advanced
7377 Teaching the Faith	24	Advanced
7378 Reading the Faith through Women's Eyes	24	Advanced
Compulsory ELO		
7401 Integrating Theology and Ministry (includes writing and Academic Report)	12	Advanced

Recommended Study Path

Unless directed otherwise by your church or by those responsible for your training, it is recommended that you:

- start with the fundamental course 7000;
- continue with the introductory Core courses that are pre-requisite for some of the Electives - spread these over at least two years (7002, 7003,

Appendix F: Copy of my written text I prepared for a sermon

Exodus ①
 prophet - prophecy not prediction! → To understand
 the moral claim of God in the present world! Challenge
 people to go to God see & run

② More than social protest - figures of moral stature
 who protest against & challenge vested interests
 - economic, political, social or religious! Connected
 with moral response to God's claims than assertion
 of human rights! Covenant relationship calls
 individual & community to be bound together as
 a result of divine initiative!

③ Proclamation of God's will! One who speaks for
 another - speak! - other is God himself!
 from being not foretelling! Steps - utterance
 of true, paradigmatic oracle, remembered by hearers
 passed on by word of mouth! recollections & other
 major prophets - Is, Jer, Ezechiel, Minor! Book of
 Hosea → Malachi! 800 Bc.

Isaiah: Political Jerusalem: unfulfilled expectations of
 Assyrian power! social / moral climate. Minority
 in the majority had potency! absence of power, judicial
 corruption. Is 51:20; Is 51:11! religious life
 Is 11:11! how does God bring people back to
 his world! Isaiah chosen to reach people!

Jerusalem, contact & priests,
 Is. call 6: 51! Isaiah's security lies in
 Sovereign will of God! Not on human resources
 - He knows intentions of God Is 6:3-5
 - Sovereignty of God needs to be shown in events
 of history! God never abandons his purpose
 for his people! There is always a reward there!
 when he makes out his will to redeem creation.

Isaiah gives expectation of coming of awaited one!
 Is 7; 14-15; Is 11! - Synthetic world and righteousness
 the mark of all the relationships within society.
 Peace is which all share!!

Suffered. - God not limited by time he is in past, present, future!
 God spoke his prophets the son [Matt 10:19] - God speaks in
 a way man can understand! To an individual in a
 particular place, time & set of circumstances! Not generally!
 God would the whole provability of the prophet - not
 postman - an ambassador!

Harvest Medicine TiSi: Imbued to positive Stigmata
 you cannot remain neutral in a moral crisis!

Our God can see you heard! God!
 in the Bible we have a responsible God!
 Do not be a not present physically appear
 1de 100 appear physically appear
 you don't appear physically appear
 I Car 1:3-4 appear physically appear
 Be alert! appear physically appear
 Be on guard, be alert! appear physically appear
 Prepare well! appear physically appear
 Right living is need for Christ's return!
 A morally alert! appear physically appear
 Alert in your life? - appear physically appear

God acts on those appear physically appear
 do not appear physically appear
 I Car 1:3-4 appear physically appear
 Be alert! appear physically appear
 Be on guard, be alert! appear physically appear
 Prepare well! appear physically appear
 Right living is need for Christ's return!
 A morally alert! appear physically appear
 Alert in your life? - appear physically appear

1st Advent 27/11/10

Let no key: Name God Father who loved us, God the Son who redeems us & God Holy Spirit who gives us life.

1st Sunday in Advent.

Preparation - reminded of 1st coming of Jesus human form - gospel hear
Getting things ready! - that we celebrate 2012 - but all about preparation!

God in Bible uses prophets to:

- Challenge people to respond to God here & now!

- who are covenant with Man's response to God's claims

- speak for God! - Thus begin the Lord of OT:

Today's readings - Isaiah's prophet - Political tension

social moral climate not good, minority rich, majority

abuse of power, judicial corruption, religious life

undermined! Our times? Tends to lived in such

times! He too is our prophet, priest king!

Gospel: Prophets keep people to come back to God!

God save abundant his purpose for his people!

All should come to salvation! God uses

the whole person - but his Son fully man!

do what does Jesus say: Mark 13: 1-2

Starts out with question! → People searching!

Be on guard be alert - know what is happening! in your life, community, world!

Keep watch - We are servants of God! - serve God in faith, trust!

Watch - Do not sleep!

Prepare: eyes, ears; Is 64. we each here or test for

God is faithful! - are you faithful? - God! Do you know your track? Are you?!

One @ door keeps watch? Who is your watchman? ⇒ Who you looking to God??

Feeling inadequate?

Paul: N5 5-9! Remember these words

When you faced with life's problems!

God keep you strong when you in him??

Are you in Christ? Christ in you? Who are you in union with? whose call do you hear?

see? taste? Baptism Accept Christ

Today reminded: How near receive! God gives!

Why? Send us out into the world!!

Amen! Encounter the true Christ in the world! not of world!

Amen! Keep watch be on guard!

Appendix G: Programme for Quiet Day

St Augustines Church Quiet Morning Reflecting on some of the Women in the life of Jesus Christ 1 April 2010

The aim of the morning is for the women to deepen their relationship with Jesus by reflecting on the women in the life of Jesus Christ and his response/s to them.

Requirements:

- a. *Each person to bring: A Bible, And A Notebook and pen- preferably their personal spiritual journals*
 - b. *Suitable music- a CD player with CD's- quiet instrumental and other music linked to the readings or the season of the Church Year.*
 - c. *A Cross that can stand alone- preferably set to stand in a garden-like setup*
 - d. *Drapes to hang on the cross- a colour for each of the phases- Blue, Green, Red and White*
 - e. *Seven candles to be lit as each stage in the morning is commenced for each phase.*
 - f. *Small strips of paper and pen for each person to write their name*
 - g. *A bowl for the strips mentioned in (f).*
 - h. *Seating- arrange the seating in a semicircle/circle with the cross as focal point.*
 - i. *Optional extras for the garden and participants to reflect on and take away- shells, stone/pebbles, perfumed oil, flowers*
1. Pray, Pray and pray before the session.
 2. Quiet Instrumental music playing in the background as the women enter the venue. They are encouraged to write their name on the strip of paper and place it into the bowl.
 3. welcome women and ask for opening prayer from member.
 4. Play CD- music to set the scene and the tone- Music can be played at other appropriate times in the morning.
 5. Provide the overall context of the quiet morning
Biblical stories are written from the perspective of men based on the Oral traditions of society at that time. There are women who played a significant role in Jesus' life and his ministry as mentioned the New Testament in particular which is our focus for today. Our meditation today will be guided by reflecting on selected Bible readings.

There are four phases-

- † *Women and the Birth of Christ;*
- † *Women and the life ministry of Christ;*
- † *Women and the death of Christ;*
- † *Women and the resurrection and life thereafter of Christ.*

Each phase will be represented by a colour draped on the cross. During each phase, there are seven stages that we will move through with a candle lit at the beginning of each phase-

- † *Draping of the cross*
- † *Context of the section*
- † *Readings*
- † *Quiet time of reflection*
- † *Recording three words that describe your feelings*
- † *Sharing of reflections*
- † *Prayers offered.*

Candles are extinguished after the prayers.

6. **Women And The Birth Of Christ – Blue Cloth**
- a. One lady to light the candle
 - b. Play instrumental music during the draping of the cross- ask two ladies to do so.
 - c. Lighting of second candle
 - d. Context- Tamar, Rahab, Ruth, Bathsheba, Mary, mother of Jesus- strength in adversity and a foundation for the family
 - e. Readings- Luke 1:26-38; Luke 1: 39-56
 - f. Quiet time of reflection
 - g. Recording three words that describe your feelings about the women and/or Jesus
 - h. Sharing of reflections
 - i. Prayers offered...

Same format continues for the rest of the session.

7. **Women And The Life and Ministry Of Christ – Green Cloth**
- a. Context- Mary supported her son in his ministry; Many women were touched and impacted on Jesus life.
 - b. Readings- John 2: 1- 12; John 4: 1- 26; Luke 7:11-17; John 8:1-11; Luke 8:1-3; Luke 10:38-42; Luke 13:10-17; Mark7:24-30.

8. **Women And The Death Of Christ – Red Cloth**
- a. Context- Mary had strong emotions running through her heart for Jesus, accepted God's will from the beginning . How did she feel when he was stripped of his garment Veronica, provides comfort in time of stress, fatigue, restores his dignity. Also the weeping women- Jesus concerned about their welfare.
 - b. Readings- Luke 7:36-50; Luke 23: 27-31; John 19:25-27

9. **Women And The Resurrection Of Christ – White Cloth**
- a. Context- Mary Magdalene- discovers the joy of Easter morning and carries it in her heart each day and to family, friends, world,- the way we live our lives , things we say, way we love our family.
 - b. Readings- Mark 16: 1-8; Mark 16: 9-11; Acts 21:9; Romans 16: 1- 5.

At the end, each person is to take a personal memento from the garden and a name from the basket. During tea, get to meet and know the person and pray for them.

Appendix H: handwritten story of JNGE

The Student Experience

JNGE was a ~~young~~ just an ordinary young little kid from the ~~rolling hills~~ ^{dusty roads} of Virginia valley. She was just not good enough, JNGE, just not good enough to be born of a married couple. She was ^{only} good enough for her grandfather to love and believe in until she age of eight years old, Well that is what she believed until that Sunday morning when all she could do was cry. Cry because it was few days before Christmas. Who would buy her a Christmas present? would she get a Christmas present. she thought as they carried her grandfather, away ^{all wrapped in a white sheet} from the house. ~~and~~ Everyone else around her was crying, she was not sure if they were sad cos of no present or because his voice would no longer be heard! His Friday nite sweet treats would no longer be! Well maybe he was no more cos she was just not good enough! She should've listened more and asked less questions. She should've sat still more and not been so fidgety! She was just not good enough, JNGE, just not good enough!

So she had to go and stay with her mom and her husband! She was just not good enough to stay with her grandmother and all the other lovely kids in the home! So JNGE set out on a path to be good enough! She worked hard at school, no time to play too much, JNGE had to be good enough! She would not disappoint anyone! She really

was as one of his teachers said, a diligent, hard working little girl who gave of her best at all times! She was happy, she was ~~as~~ excited to be good enough! She would be good enough to one day become a doctor! After all she was good enough in school and she would no longer be just not good enough! She was sad!

Soon her Mom realised she may just not be good enough to become a doctor! Oh my just not good enough as she did not have the required subjects @ school to become a doctor! Oh my the family dream was not to happen! TNGE, TNGE!!!

The ^{big little} school in the rolling hills ^{with dusty roads} of Muzinkulwana could not ~~possibly~~ produce a doctor. It was just not good enough for TNGE! Her bags were packed and she was sent off to the Queens City. They spoke a different language in the Queens City big school! This was not a big, little school! It was a big, big school! So many children! all these strange faces!! all these strange languages! She TNGE was just not good enough to be there! She could hardly speak the language. TNGE had a strange accent, she said banana, others said beenana, she said ya'll when referring to many people others said use!! It was hard. TNGE knew she had to be good enough! Many sacrifices were made so that she had the opportunity to become a doctor! Oh my, she missed all the wonderful birthday celebrations @ home, she missed all the wonderful family outings! She missed all her friends from the ^{dusty roads} rolling hills of Muzinkulwana. She would become good enough to be able to move back closer home. Queens City was more than nine

hours drive from the dusty valley hills of
Mazankulwana.

JNGE worked hard, she was serious about school!
She aimed to be good enough! JNGE was good
enough she was so proud of herself @ the end
of her school year she was gonna be good enough
there. Sadly, she was not going to become a doctor
cos she realized she could just not face working with blood
and really she did not want to be a doctor. She
was not good enough. JNGE!

She ended her metric year with an A plus in
Maths on the Higher Grade. She had done good enough!
Even passed the subject that she had not done
the foundations of in junior sec. school! She was good
enough, so she thought JNGE! was good enough!

She really desired to now become a pharmacist
she loved working with chemistry & people! Also she
was not good enough to enrol for Pharmacy @ an
Institution of her choice - She was not the right colour
Not good enough!

When will she be ever good enough?? Are you
ever good enough? She wondered! Maybe her name
should have been ~~JNGE~~ AGE - ABSOLUTELY GOOD ENOUGH
instead of JNGE She may have
been happier in life!

Age!

Appendix I: Sherlien's Powerpoint presentation

2012/10/25

Card Games
An End to Rote Learning ??

elc

Why?

- 2nd year students
- microbiology
- biochemical tests
- tedious information
- Rote learning
- No long term memory

elc

What?

- Card game
- Rummy
- All pertinent information

elc

How?

- Cardboard cards
- 5-7 cards per biochemical test
- 7 tests per set
- 3 sets per game deck

elc

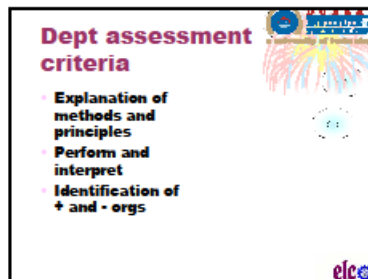
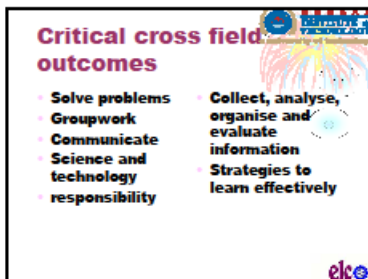
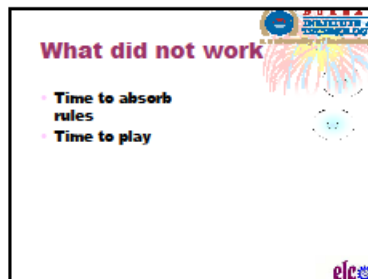
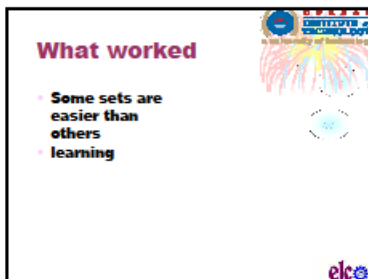
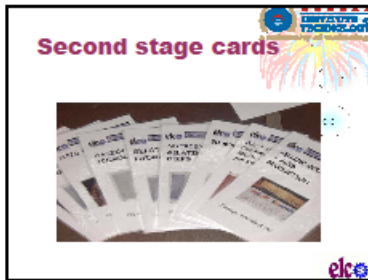
Rules

- 4 players max
- 7 cards per player
- Set of 4
- Rest = fillers or set of 3
- Winner = no cards

elc

First cards

elc



2012/10/25

Where to?

- **Evaluation**
(previously done, but not captured)
- **Printing**
- **patenting**


elc

Deep appreciation

- **Delysia Timm (ELC)**
- **Dept of Biomed Tech**
- **DIT**
- **students**

elc

Appendix J: Programme of the Mini- Congress of Society of Medical Laboratory Technology of SA (SMLTSA) held in February 2002



SMLTSA
KwaZulu Natal
Coastal Branch
Mini - Congress
26 October 2002
Programme

- BLOOD TRANSFUSION**
An overview of Prevalence Testing
Ms N Govender, Pathology, SANBS, Pinetown
- The HLA System**
Ms M Nabeek, Transplant, SANBS, Pinetown
- An overview of the Cytogenetics Laboratory**
Ms B. Sijim, S. Kwafor, A. Synt, B. Ndleko, S. Rajar, I. Shazi, Cytogenetics, SANBS, Pinetown
- The rare donor Programme in South Africa**
Ms E. Smart, Immunohaematology, SANBS, Pinetown.
- Chromosomes Analyze In-hair**
Ms B. Rhoole, Cytogenetics, SANBS, Pinetown.
- CHEMICAL PATHOLOGY**
- A Comparison of serum osmolality using the manual method and the calculated method: A King Edward VIII Hospital experience.**
Dr D. Nkomo, A. Maphoo, C. Mashang, Chemical Pathology Department, King Edward VIII Hospital, Durban.
- Hypothyroidism and Hyperthyroidism**
Ms V. Naidoo, S. Sathnasing, Department of Chemical Pathology, King Edward VIII Hospital, Durban
- The importance of the addition of the correct preservatives and its impact on 24 hours urine sample collection: A King Edward VIII Hospital experience.**
Ms S. Nageswari, J. Balisambidi, Department of Chemical Pathology, King Edward VIII Hospital, Durban.
- Clinical investigations with optimized laboratory testing and its relevance and impact to diagnosis on patients with Myeloma**
Ms S. Nageswari, Ms U. Balisambidi, Department of Chemical Pathology, King Edward VIII Hospital, Durban.
- VIROLOGY**
- The Influenza Virus**
Ms N Pillay, Department of Virology, King Edward VIII Hospital, Durban.
- Epidemiology of HIV in South Africa with its epicenter in KwaZulu Natal**
Dr P. Moodley, Department of Virology, King Edward VIII Hospital, Durban.

08:00-08:50	Registration				
09:00-09:00	Welcome Address Mrs L Shives, Chairperson, SMLTSA, KZN (Coastal Branch)				
09:00-09:30	Session 1: Chairperson: Ms L Shives Stress Management Dr H.P. Novitski, Specialist Psychiatrist, Mt Edgecombe Hospital	14:00-14:15			SESSION 3: CHAIRPERSON: Miss R Bridgman The Rh Blood Group System - RHD Genotyping Mrs E. Smith, Mr P. Reddy, Immunohaematology, SANBS Pinetown. Innovative Teaching Methods Ms S. Pillayasingu, Dept of Medical Science, Durban Institute of Technology, Durban. An innovative method for Biomedical Technology learners. Mr D Govender, Department of Medical Science, Durban Institute of Technology, Durban.
09:30-10:00	Medico-Legal Ethics Ms N. Reddy, Forensic Department, Durban	14:15-14:30			KZN Provincial TB Programme-2years on, its strengths and weakness. Mr AN. Bhattar, King George Hospital, Durban.
10:00-10:30	Recent Developments in M.H.L.S. Mr C. Gussiep, CEO - MHLG, Braamfontein	14:30-14:45			Susceptibility patterns of Streptococcus Pneumoniae and Haemophilus influenzae from naso-pharyngeal aspirates in paediatrics patients in Kwa Zulu Natal. Mr W. Rajkowsky, Department of Medical Microbiology, University of Natal, Durban
10:30-11:00	TEA	14:45-15:00			Presentation of Awards Ms L Shives Vote of Thanks Mr Rob Wilkinson
11:00-11:30	Session 2: Chairperson: Mrs P Singh Practical Aspects of Medical Negligence for Laboratory Personnel Dr S. Naidoo, Forensic Pathologist, Durban	15:00-15:15			POSTER PRESENTATION
11:30-11:45	Cold Agglutinins: A Case Study Ms R. Beckenkamp, Dr D. Moolloy, Dr S. Asmal Dept of Haematology, King Edward VIII Hospital, Durban	15:15-15:20			MICROBIOLOGY Analysis of gastric washing results submitted for tuberculosis culture over a three year period 1998-2000 Mrs L. Ross, J. Masekela, D. Nelsoor, A.W. Sturm, Department of Medical Microbiology, King Edward VIII Hospital, Durban.
11:45-12:00	Update on Malaria and the Control Programme in KZN Mr L. Taylor, Public Health Lab, (KZN), Pinhoe Street, Durban	15:20-15:30			Mobilisation: A specific cause of vaginal discharge? Mrs R. Baidoo, A.W. Sturm, P.D. Sturm, P. Moodley, B. Moneamey and F. Kaurin, Africa Centre for Population Studies and Reproductive Health and The Department of Medical Microbiology, Nelson R Mandela School of Medicine, Durban.
12:00-12:15	Ank Neutrophil cytoplasmic antibody: A laboratory update on immunological testing at Inkosi Albert Luthuli Central Hospital Mrs H. Dimmock, Dept of Haematology, JALCH, Durban		M1		
12:15-13:00	POSTER WALK				
13:00-14:00	LUNCH				

Appendix K: Testimonial for Sherlien written by D Timm

15 July 2011

To whom it may concern TESTIMONIAL – Sherlien Prithepaul

I have known and worked with Sherlien since 2001 when she influenced my practice and was willing to share her knowledge in the design and development of innovative learning materials for her Biomedical Technology students. Sherlien attended workshops on *Using Information Communication Technology to Promote Active Learning* that I facilitated as a Materials Developer in the Effective Learning Centre at the Durban University of Technology (formerly ML Sultan Technikon). It was during these workshops that she shared how she had started developing games for her students and I learnt from her experience.

Her desire to connect with her students and to connect them with the subject led her to observe their actions and behaviours even outside the classroom. She observed the fun and deep levels of engagement that students experienced whilst playing card games on the steps and in the corridors – she wanted them to have this same experience in her classroom. Hence she started designing and developing card games and games such as BINGO, using the subject material as the content for the games. Sherlien truly does not fear including her personal self in her teaching and does not seek safety in the technical, distant and abstract approaches to teaching. Instead she has the courage to teach in the moment in a concrete form with great passion and enthusiasm. She loves her learners, learning and the teaching life to the extent that instead of getting out of trouble, she rather goes deeper in by entering the tangles of teaching to get a better understanding of them and to serve her students well¹⁹.

Having started in 2001 with the games designed and handwritten on colored cardboard, she has made many informed revisions including using computers to design and develop her material and extended to other innovative material. She has also shifted from designing and developing the material to getting the students to design and develop their own learning material which I believe has truly enhanced her student-centered approach to learning and teaching, ensuring that she continues to be a learner as well in her classroom.

Sherlien, as the pioneer in 2001 of using games for learning at DUT, has willingly and enthusiastically shared her ideas of innovative teaching as well as her actual innovative practice with other staff in her department and across the campus.

Her ability to be a life-long learner has ensured that she is constantly stretching the boundaries of what she teaches and learns and how she teaches and learns in her interactions with her learners.

I recommend her highly as an innovative, caring teacher showing understanding of teaching and learning whilst providing good leadership and teamwork with other academics.

Delysia Timm

Advisor: Special Projects *in the office of the DVC:Academic*, DUT.
Cell: 0835950183 email: timmdn@dut.ac.za

¹⁹ These aspects are taken from *The Courage to Teach* by Parker Palmer (1998).

Appendix L: Dorinda's Games and Poster Assignment

ASSIGNMENT 3: INTEGRATED ASSIGNMENT

PATHOLOGY CASE STUDY, GAME & POSTER PRESENTATION

COMPONENT 1: PATHOLOGY CASE STUDY POSTER PRESENTATION

-In groups, as designated by your lecturer, each group is to recruit one client with a treatable pathology/condition (see applied pathology list) who will be prepared to participate in a reflexology case study assignment during class times.

-Each member of the group will participate in recording the case history of the client at a time convenient to the client, the group and subject to an available venue. All contracts, letter to participate need to be discussed and signed. Client history and information is recorded on record card.

- Thereafter each member of the group will treat the client twice. Each client will be treated once a week during a class session and one off campus treatment is allowed thus, a total of 2 per week should be completed. A minimum of 8 treatments(4 weeks)should be completed.

- Each therapist will update the client record card and complete a reflection sheet after each treatment.

These treatments will be carried out during class time (Wednesdays), under supervision of the lecturer.

NEGATIVE MARKING will be employed

i.e. minus 5% for any treatment missed by a student or client not organized appropriately according to contract agreement (not arriving)

-On completion of these treatments, complete a poster of the pathology case study which you have conducted as part of the previous section of the assignment.

-The purpose of the poster will be for you to present:

- The theoretical information on the presented condition ie: Common name, medical name, causes, symptoms, common treatment/medication etc.(Literature review)
- The treatment procedures and protocol that were followed (methodology)
- The results achieved.

-Include the following

- Write up on the pathology including relevant body system
- Client profile
- Observations of the feet relative to condition being

- treated
- Attached Record card (Clear, comprehensive & neat)

Technical information:

- Font Arial, size 12 for written documentation
- Font Arial, minimum size 28 and in bold for information on poster.
- Heading font for poster up to 72 font size and Arial also in bold.
- Refer to guide at end on tips for poster presentation.

ASSESSMENT CRITERIA

Assessment will be based on the following:

• Name of institution	1
• Name of topic	2
• Name of presenters	2
• Introduction	5
• Theory of the pathology/body system	20
• Client profile/Observations/Treatment info	15
• Results	5
• Conclusion	5
• References	5
• Presentation (layout, durability etc)	30
• Attached Record Card	10
TOTAL	100

COMPONENT 2: OIL BLENDING AND COSTING

Practical component

-A group will analyze and record the case history of one individual (pathology client from reflex study) during a supervised class session.

- In consultation with the group and the lecturer each group will decide on a blend of aromatherapy oils and a suitable carrier oils to meet the requirements of the client -A minimum of 3 and maximum of 5 essential oils are to be selected for each blend.
- The oil may be used to complete reflexology treatments with or the group can design an aromatherapy tool for the client to assist in their treatment.

Theoretical Component

-Reasons for choice of the selected oils to be given. Explanation of what method/tool used.

- A list including the following must be included in a summary Common name, Botanical name, Specie/family, Part of plant used, Principle chemical constituent and Properties.

- A detailed costing using standardized up to date price lists to be included. The

massage blends are to be blended to meet the needs and the preferences of the clients, whilst at the same time being cost effective.

-Blend 10ml per client for treatments.

* See Essential and carrier oil listing – Appendix A

* See standardized price list – not included

Assessment will be based on the following:

Blend suitability

• Relative to condition	30
• Relative to fragrance	20
• Relative to cost and costing	30
• Correctness of summary	10
• Presentation of tool	10
Total	100

COMPONENT 3 : GAME

In groups, as designated by your lecturer, design and produce a game to aid in learning the position of the reflexes found in the feet and the pathology/condition that was treated by reflexology. Assessment will be carried out by peer assessment based on the game meeting both :

1. Fitness for purpose
2. Fitness of purpose

Assessment will be based on the following:


• Colourful	20
• Durability	20
• Ease of participation	20
• Practicality of transport	20
• Standard of theory	20
TOTAL	100

Appendix M: From designing games to understanding learning: what happens when we play? Powerpoint presentation

2012/11/04


From designing games to understanding learning: what happens when we play?

Delysia Timm




Outline

- Play and learning
- Games and learning
- Learning- Process and product -of game playing




"All the world's a stage
And all the men and women merely players
They have their entrances and exits
And one man in his time plays many parts
His acts being seven ages."

William Shakespeare
As You Like It, Act 2, Scene 7 : 139-143




"The commonsense tendency is for people to define *play* as the opposite of work"

Rieber, 1996, p. 2




For example, play is traditionally viewed as applying only to young children.
Play seems to be something you have to give up when you grow up

(Pruitt, 1990).



There is also a sense of risk attached to suggesting an adult is at play.
Work is respectable,
play is not.



Another misconception is that play is easy.

Likewise, children's play is an engaging and deliberate activity in which they devote great effort and commitment. Another misconception is that the activity of play is irrelevant or inconsequential to either formal or informal learning.

Quite the contrary, even as adults we tend to engage in unusually challenging and difficult activities when we play, such as sports, music, hobbies, and games like chess (though adults may balk at using the word "play" to describe these activities)
Csikszentmihalyi, 1990

Work becomes play when one's job is so satisfying and rewarding that getting paid to do it is of secondary importance.
Reiber, 1998
Learning becomes play when *learning* is so satisfying and rewarding that getting marks is of secondary importance.

some researchers are in agreement that games do lead to greater *student involvement* and *increased motivation*, and therefore *enhance the learning process*.
In the course of a game, learners are engaged in an *enjoyable* and *challenging* activity with a clear goal. Often, learners are so involved in playing the games that they do not realize that learning is taking place
Sheptochvili, 2002

History of Learning Games at MLST then DUT

- Learning Materials Development Workshops
- Chemistry Game
- Biomedical Technology
- Dental Technology

History of Learning Games at MLST then DUT

- Environmental health
- Tourism
- Chemical Engineering




How does this learning process operate?

- Empirical observation of learning...


Learning is a process of new behaviour or knowledge acquisition through influence of interaction with one's environment	Learning should be seen as a qualitative change in a person's way of seeing, experiencing, understanding, conceptualising something in the real world
---	---

Seave et al. Marton & Ramacker



What is the process which informs what we see happening?

- Emotional involvement triggering molecular change in the bodymind




Candace Pert

...we have found that in virtually all locations where information from any of the five senses –

- sight, sound, taste, smell and touch – enters the nervous system, we will find a high concentration of neuropeptide receptors.


Pert 1997:142



Candace Pert


Using neuropeptides as the cue, our bodymind retrieves or represses emotions and behaviours.

Dr Eric Kandell and his associates at Columbia University College of Physicians and Surgeons have proved that biochemical change wrought at the receptor level is the molecular basis of memory.



...memories are stored not only in the brain, but in the psychosomatic network extending into the body


...memory is encoded or stored at the receptor level means that the memory processes are emotion driven and unconscious but like other receptor mediated processes can sometimes be made conscious."



Pierre Janet


...we think with our hands, stomach and brain.

..tissues throughout the body and not just our brain store memory




Michael Gershon

Nearly every chemical that controls the brain in the head has been identified in the gut, including hormones and neurotransmitters.




Neurobiologists

Brains can and do change with new input...



It is what we think we know already that often prevents us from learning

Charles Ferns




Appendix N: Challenges of Structure, Environment and Process facing a part-time doctoral student in a new UoT: a critical autobiographical view. Powerpoint Presentation

2012/11/04

Challenges of Structure, Environment and Process facing a part-time doctoral student in a new UoT: a critical autobiographical view

Delysia Timm




What does a Doctorate study look like?

STRUCTURE

- +UoT
- +Webber, 2004
- +TP, 2014
- +Research paradigms
- +My Learning journey
- +My knowledge
- +My skills
- +My values

Is it about learning?
Is it about knowledge?
Is it about career?
Why the specific duration?




Where does Doctorate study take place?

ENVIRONMENT

- +UoT
- +My work
- +My home
- +My family
- +My friends
- +My pets

Is it only at the University?
Is it about whole body involvement?
Is there a flow of life-affirming energy?



How is Doctorate study done?

PROCESS

- +UoT
- +Regulation
- +Myself
- +My supervisor
- +Myself
- +Myself
- +Myself
- +Myself

Is support flexible enough?
Is it organic?
What is the product?

