

**EVOLUTION OF MY SUBJECT MATTER KNOWLEDGE FOR
TEACHING ENERGY RESOURCES AND ITS USES IN GRADE
11: SELF -STUDY**

BY

MAUREEN K. KHUMALO

0419703M

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Supervisor

Prof. Marissa Rollnick

Khumalo M.

Declaration

I declare that apart from the assistance acknowledged, this research report titled

Evolution Of My Subject Matter Knowledge For Teaching Energy Resources And Its Uses In Grade 11: SELF -STUDY

is my own unaided work. All sources that I have used or quoted have acknowledged by means of complete citation and referencing. This research report is being submitted in partial fulfilment of the requirements for the degree Master of Science education at the Witwatersrand Johannesburg. It has not been previously submitted for any degree or examination at any other university.

Khumalo Maureen Khethiwe

March 2013

Abstract

The implementation of a new curriculum is a challenging issue to educators in many countries. In this country training for an implementation of a curriculum is done in one week and it takes a form of one a size fits all. The study investigated how I transform my content knowledge when teaching a new topic in the new curriculum. The aim of this study was to carry a self- study of how I transformed my content knowledge when teaching energy resources and its uses to make it comprehensible to learners.

The following research question guided the study:

- ❖ How did my PCK develop as I developed the broad content of the energy resources and its uses into focused, teachable and comprehensible content?
- ❖ How did my planning and reflecting on practice change as I participated in the process of planning, developing and implementing the lesson plans?

When teachers teach, they draw upon knowledge of their subject matter, general pedagogy as well as context. This could be improved by the contribution of the concept of pedagogical content knowledge where content and pedagogy are blended. Therefore, for this study I have chosen PCK as a theoretical framework because I will be looking at how my content knowledge can be transformed into content knowledge for teaching.

The study employed a qualitative research, which uses multiple realities that are socially constructed through collective and individual definitions of the situations. It is a self –study focusing on my own teaching and intending to improve my practice as a teacher. The focus is myself teaching two grade 11 classes in a township school.

Data was collected in a form of concept maps, reflective journals, lesson plan and CoRE s and PaPeRs. CoRes and PaPe-Rs were used to capture and portray my PCK. The methodological tools used to document and portray my Pedagogical Content Knowledge when teaching energy and resources, used representations called Content Representation (CoRe) and Pedagogical and Professional – experience Repertoires (PaP-eRs). The CoRe elaborated on my construction of content, which framed the topic and each Pa-PeR, was a narrative derived from the classroom observations and the journal.

Findings in this study indicate that using the CoRe and PaPeR as a tool to portray PCK helps in the development of content knowledge. Some elements of PCK could be identified and the implementation of developed lessons led to insight into my teaching. Learners participated more freely and develop confidence when home language was used. I gained confidence using the CoRe to develop lessons.

Key Words: Content Knowledge, Energy resources, National Curriculum Statement, curriculum 2005, Chemical systems, Pedagogical Content Knowledge (PCK), Content Representation (CoRe), Pedagogical and Professional experience Repertoires (PaP-eRs).

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Table of Contents

<u>Contents</u>	<u>Page</u>
Declaration	ii
Abstract	iii
Acknowledgements	v
Table of Contents	vi
List of Tables	ix
List of Captions	ix
List of Figures	x
Abbreviations	xi
 CHAPTER 1: Introduction	
1.1 Introduction	1
1.2 Context of the Study	1
1.3 Rationale for the Study	2
1.4 Statement of Problem	3
1.5 Aim of the Research.....	3
1.6. Research Questions.....	4
1.7 Outline of Research Report.....	4
CHAPTER 2: Literature Review.....	6
2.1 Introduction	6
2.2 Theoretical Framework	6
2.2.1 Pedagogical Content Knowledge.....	6
2.2.2 Capturing and Portraying PCK.....	13
2.2.3 The Profile of Implementation.....	14
2.3 Background on Mining	17
2.3.1 Content Based Approach.....	17
2.4 Learner's Difficulties in Chemistry Topics and Effective Science Teaching	17
2.5 Chapter Summary.....	18

CHAPTER 3: Research Design and Methodology.....	19
3.1 Introduction	19
3.2 Research Design	19
3.3 Methodology	19
3.4 Sample	21
3.5 Methods	21
3.5.1 Lesson Video Recording	21
3.5.2 Learner ‘s Worksheets	22
3.5.3 Collaboration Team	22
3.5.4 Concept Map	23
3.5.5 CoRe’s, PaP-eRs and lesson plans	24
3.6 Data Collection Process	25
3.7 Data Analysis	27
3.8 Ethics consideration	27
3.9 Validity, Reliability and Credibility	29
3.10 Chapter Summary	30
CHAPTER 4: Capturing and Portraying PCK	31
4.1 Introduction	31
4.2 Development of CoRe	31
4.2.1 Construction of the CoRe	32
4.2.1.1 Construction of Big Idea 1	33
4.2.1.2 Construction of Big Idea 2	33
4.2.1.3 Construction of Big Idea 3	33
4.3 Development of the PaP-eRs	37
4.3.1 PaP-eR on Energy resources and its uses	37
4.3.2 PaP-eR on Home activity	39
4.3.3 PaP-eR on Environmental issues	40
4.3.4 Discussion on PaP-eRs	41
4.5 Chapter Summary	41
CHAPTER 5: Discussion and Conclusion	42
5.1 Introduction	42
5.1.1 Data Sources	42
5.2 Pedagogic Content Knowledge Analysis	43
5.2.1 Learner’s prior Concepts	43

5.2.2 Subject Matter Representation	45
5.2.3 Instructional Strategies	45
5.2.4 Curriculum Material	50
5.2.5 Curricular Saliency	51
5.2.6 Knowledge about Students Understanding	51
5.3 Analysis of Content Knowledge	52
5.4 Implementation of Learning Outcome Three.....	55
5.4 Chapter Summary	56
CHAPTER 6: Recommendations and Conclusion	57
6.1 Introduction	57
6.2 Overview of the Study	57
6.3 Critical Reflection of the Study	57
6.3.1 The Methodology	57
6.3.2 Discussion of the findings.....	58
6.3.2.1 Designing of lesson plans and teaching process	58
6.4 Summary of the Findings	59
6.4.1 Research question 1	59
6.4.2 Research question 2	60
6.5 Discussion and Conclusion.....	60
6.5.1 Limitations of the study	61
6.6 Recommendations.	61
References	62
Appendix A: Consent Letters	66
Appendix B: Ethics Letter.....	70
Appendix C: Lesson Plans	72
Appendix D: Researchers Diary (Sample)	87
Appendix E : Learners' worksheet (sample).....	90
Appendix F: Example of Transcripts from the Collaboration Team	95
Appendix G:Lletter from the Department of Education.....	96

List of Tables:

Table 2.1: Description of four level “profile of implementation i.e. Science in Society	16
Table 4.1: Consolidated CoRe	36

List of Captions:

Caption 5.1: Video 1’ Lesson 1, 25 minutes.....	50
Caption 5.2: Snapshot showing learners during role play	55

List of Figures:

Figure 2.1 The ‘spinning top’ Model by Denley and Bishop 2007	10
Figure 2.2. Teacher’s Knowledge that facilitates transformation of subject matter (Geddis and Wood , 1997)	11
Figure 2.3. Model of curriculum implementation (Rogan & Grayson 2003)	14
Figure 3.1.Data collection flow diagram	26
Figure 4.1. Learner flow diagram	41
Figure 5.1 Components of teacher knowledge that facilitates transformation of subject matter knowledge Model adapted from Geddis &Wood 1997.....	43
Figure 5.2. Strategy used for teaching	46
Figure 5.3. Learner flow diagram A	47
Figure 5.4.Learner flow diagram B	49
Figure 5.5. My concept Map 1	53
Figure 5.6. My concept Map 2	54

Abbreviations:

CK	: Content Knowledge
C2005	: Curriculum 2005
CoRe	: Content Representation
DoE	: Department of Education
FET	: Further Education and Training
LO3	: Learning Outcome three
NCS	: National Curriculum Statement
PaP-eRs	: Pedagogical and Professional experience Repertoires
PCK	: Pedagogical Content Knowledge