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

BY

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A Research Report submitted in partial fulfilment of the degree of

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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

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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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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