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Science educators' ideas of the "science" in IKS and their willingness to include IKS in the school science curriculum

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Declaration

I declare that this research report is my own, unaided work. It is being submitted in part of the fulfilment of the requirements for the Degree of Master of Science at the University of Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

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……..day of……2010

Abstract

The requirement to include Indigenous Knowledge Systems in the science curriculum as mentioned by the Curriculum 2005 (DOE, 2003) and the NCS (DOE, 2008) has left educators wondering how to tackle this issue. IKS as defined by Onwu and Mosimege (2004) and Ogunniyi (2007) seems very broad. The problem then is to determine what components of IKS can be included in the school science curriculum. The other confusion brought by the need to include IKS in school science is how this may help to solve the current high failure rate in science that South Africa is experiencing. The realisation of the need to include IKS in school science was brought along with curriculum changes. One wonders then how the inclusion of IKS in school science will match the need to link science education with the changing nature of South African society.

The expectations of the educators regarding the inclusion of IKS need to be investigated since they are at the level of the implementation of the curriculum. This study aims not only to discover their expectations but also their understanding and interpretations of IKS. Some textbooks such as Freedman, McKay, Pillay and Webb (2007) mention the need to include IKS in the science classroom but do not elaborate on which components of IKS and how it should be integrated. The problem of deriving the aspects of IKS that should be included is left to the educators. There is therefore a need to investigate the educators' knowledge of IKS, their expectations and their willingness to integrate IKS into school science.

The purpose of this study is to investigate what science educators consider to be those aspects of science in IKS that can be integrated into science lessons. We ask "What specific IKS content that could possibly be included in school science, are science teachers aware of?" and "What are teachers' expectations of the inclusion of IKS and attitudes to implementing the inclusion of IKS into school science?"

The ten educators that participate in this study are from both township schools and former Model C schools. They have responded to a questionnaire and a follow up semi- structured interview. The research project takes the format of a case study in which the ten Life Sciences educators attend IKS focussed discussion groups. In such seminars the educators deliberate on what IKS to include in the school science. Educators are requested to make a compilation of what they consider to be the IKS relevant to a given Life Sciences topic.

In this paper I discuss an innovative data collection strategy: *collaborative reflection* (Keane, 2009). I report on the process which shares power in knowledge generation – a process particularly appropriate to IKS work. I also discuss the data results from the seminars and responses from the questionnaire. Here we present findings on educators' degrees of awareness of the IKS that can be included in school science and discuss their willingness to include IKS in school science.

The research indicates that while educators are aware of the requirements of the curriculum to include IKS, they are not clear as to what to consider as IKS. The educators consider the task of identifying relevant IKS to be difficult while working as individuals. The collaborative seminars helped teachers identify relevant IKS to include in school science and brought about some positive change in attitude as

educators began to appreciate the richness of IKS. Educators also feel that there is need to include the custodians of IKS in the process of identifying relevant IKS.

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Dedication

To my parents back home in Zimbabwe and all my family members

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Abbreviations

CDB	Central Business District
IKS	Indigenous Knowledge Systems
DoE	Department of Education
Msc	Master of Science
NCS	National Curriculum Statements

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