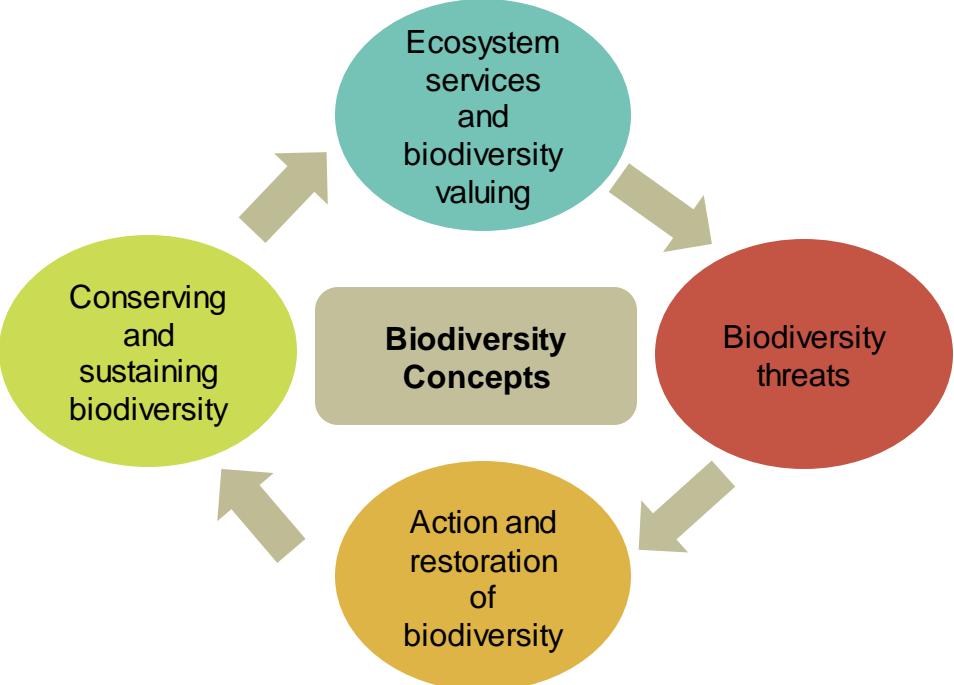


RECONTEXTUALISATION OF BIODIVERSITY KNOWLEDGE IN THE SENIOR PHASE NATURAL SCIENCES CURRICULUM

Makwena Mmekwa's Master's in Education research focused on the recontextualisation of biodiversity knowledge in the Senior Phase Natural Sciences Curriculum. She was interested in investigating how biodiversity knowledge is presented in the field of production and then how it is recontextualised in the Official Recontextualisation Field and Pedagogic Recontextualisation Field, specifically in the Senior Phase Natural Sciences CAPS and supportive textbooks.

She used biodiversity knowledge constructs in the Vision and Mission in Global Biodiversity Outlook 4 (SCBD, 2014) to analyse the biodiversity knowledge in one international and one national scientific document. These knowledge constructs were ecosystem services and biodiversity valuing, biodiversity threats, actions and restoration of biodiversity, and conserving and sustaining biodiversity.



Using Bernstein (2000)'s Pedagogic Device, she then examined the recontextualisation of this knowledge in the CAPS policy document and in three Grade 7-9 textbooks respectively. Interviews with two Natural Sciences Senior Education Specialists, a Natural Sciences Provincial Coordinator, an Eco-School coordinator and a textbook publisher gave insight into the recontextualisation process.

Findings illustrated that the international document and the national document present knowledge that allow us to understand the value of biodiversity in the environment as well as how human beings interact with it. They present procedural knowledge, which shows the relationship between diversity and human well-being and the services we get from ecosystems. There is also coverage of how the loss of biodiversity may damage the earth's ecological balance - disturbing cycles of rain and drought, seasonal temperatures, and nutrient exchange. The concept of restoration is covered through cases of re-establishment of habitats, landscapes and biodiversity that have been altered or destroyed. The two documents describe natural ecosystems in protected areas, national parks, biological reserves and other conservation sectors.

The Grade 7 CAPS and textbook do not deal with these features explicitly but introduce foundational knowledge important for understanding biodiversity and also implicitly introduce learners to these key features. The Grade 7 CAPS does not yet introduce the three types of biodiversity (species, ecosystem and genetic) but provides foundational knowledge to understand species diversity through classification of living things. This knowledge is also foundational to understanding biodiversity loss. The textbook presents two types of biomes - aquatic and deserts - and discusses how they are useful to animals and plants living there. This is knowledge foundational to understanding supporting services. CAPS highlights pollination and its importance and human-environment relation through pollinators increasing production. This is foundational knowledge for understanding regulatory services, however the textbook does not expand on this topic. It does, however, present pollination and seed dispersal and provides Knowledge on how humans contribute in dispersing alien Invasive plants. This is important foundational knowledge for understanding biodiversity threats.

In Grade 8 both CAPS and the textbook present foundational knowledge on interactions of organisms and environment. Conceptual and procedural knowledge about ecosystems is presented. Both present knowledge foundational to understanding resilience of ecosystems through adaptations. Ecosystems services are not explicitly discussed. Feeding relationships, energy flow and balance in ecosystems knowledge is presented for developing understanding of biological systems. This is important foundational knowledge for understanding sustainability. Foundational knowledge about understanding biomes and value of biomes from Grade 7 is not continued in Grade 8. Grade 8 CAPS and the textbook explicitly discuss threats and biodiversity loss. Actions and conservation of biodiversity is not well developed, but the topic of how citizens can contribute to conservation in various ways such as recycling is raised.

The Grade 9 CAPS document and textbook presents conceptual knowledge for understanding threats and knowledge foundational to understand biodiversity loss. For example, they introduce the effects of mining in South Africa. They also presents procedural knowledge on greenhouse effect and global warming which are foundational for understanding biodiversity loss.

Overall research showed that biodiversity knowledge in the CAPS policy document appears to be presented as foundational concepts and then the textbooks contextualize that foundational concepts and broaden the concepts mostly through pictorial illustrations, case studies and contextual examples.

A recommendation from the research is that the official recontextualisation process should review opportunities to draw on international and national documents that present concepts and contemporary cases of biodiversity content knowledge to ensure that the complexities around biodiversity are addressed by the curriculum.

REFERENCE
 Bernstein, B. (2000). Pedagogy, symbolic control and identity: Theory, research and critique (Revised.). Lanham: Rowman and Littlefield Publishers..

TERM 1: LIFE & LIVING	
TOPIC	
Biodiversity	Classification of living things
	Requirements for sustaining life
	Biodiversity
	Classification of living things
	Diversity of animals
	Diversity of plants

Interactions and interdependence within the environment

writing about the importance of maintaining biodiversity and sustainable use of natural resources