

Maebeebe Mokeleche

Lesotho College of Education,
Maseru

University of the Witwatersrand,
Johannesburg

Marang Centre for Mathematics
and Science Education

Maebeebe.Mokeleche@wits.ac.za



Focusing on teaching climate education

- Pertinent issues
 - Climate education is a new content in the physical science curriculum
 - Majority of physical science teachers are not familiar with the content
 - One of my foci is how they teach climate education and what help they may need
 - Involves establishing their baseline knowledge in climate education
 - Sharing teaching strategies in order to assist and inspire one another

Investigations and some outcomes

- Developed and administered several research instruments:
 - Diagnostic questionnaire, workshops, interviews, lesson observations, even having some informal discussion with teachers
- Some outcomes:
 - A lot of misconceptions on climate education content among teachers
 - Affirmation of some learners' misconceptions during teaching (evident of teachers' limited knowledge on climate education)

Assistance offered

- Running teachers' workshops
 - Through individual research projects (doctoral & post doctoral)
 - through the university research centre (Marang for both maths & science)
- Workshop foci:
 - Helping teachers with content areas on new topics in the curriculum
 - Sharing teaching strategies and challenges of implementation of the new curriculum

Example of activities we do

- Sit and discuss the content we need to teach (in this case climate education)
- To guide our discussion, we found quite valuable Loughran et al (2004)* tool for reflecting on teaching (although it was not originally not developed for reflections)
- It's a research tool but if teachers understand it can use it for reflections and self studies
- Helps teachers to give the content a thought it deserves before teaching
- It involves explication of Content Representation (CoRe) & Pedagogical and Professional Experience Repertoire (PaP-eR)
 - Briefly called CoRe and PaP-eR

Loughran, J., Mulhall, P. & Berry, A. (2004). In search of pedagogical content knowledge in science: Developing ways of articulating and documenting professional practice. *Journal of Research in Science Teaching* 41(4) 370 - 391

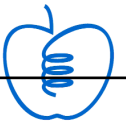


CoRe & PaP-eR

- CoRe:-
 - organises content into big ideas
 - Complete statements that summarise the content to be taught or the main idea/concept in the topic
 - Guided by prompts that help teachers to reflect on:
 - Their own understanding of content
 - Possible learners misconceptions and difficulties with the topic
 - Appropriate teaching strategies
- PaP-eR:-
 - Individual's experience and elaboration of teaching a topic
 - Involves giving reasons for opting for certain activities and not others etc

Reflective/planning tool

Important science ideas in climate education			
	Big idea 1	Big idea 2	Big idea 3
Prompts			
1. What do you intend students to learn about this idea?			
2. Why is it important for students to know this?			
3. What else do you know that you don't intend students to know yet?			
4. What are the possible difficulties and limitations connected with teaching this idea?			
5. Knowledge of students' thinking which influences your teaching of this idea.			
6. What are the other factors that influence your teaching of this idea?			
7. Which teaching procedures will you use and why?			
8. How will you ascertain students' understanding or confusion?			



- Now in small groups lets construct our own CoRes (on climate education)
- One big idea
- If time allows we will discuss to share our experiences in engaging into this

Thank you

