

EXAMINING ACTIVE AND CRITICAL APPROACHES TO ENVIRONMENTAL LEARNING

Christina Chitsiga's Master's research focused on the CAPS commitment to involve learners in active and critical approaches to learning. She was interested in exploring teaching methods that might enhance active and critical learning, and the factors that enable and constrain the use of these methods. Two Grade 11 Life Sciences teachers participated in her study; and interviews and classroom observations contributed to descriptions of their teaching practices.

DELIBERATION

Methods and strategies supporting knowledge co-constructing / co-creation

SITUATED LEARNING

Defined as learning in relation to cultural historical context

PROXIMITY EXPERIENCE

Participants' hands on encounters / experiences in context of intergenerational & everyday interactions

PRACTICAL REASON

An interactive relationship between content knowledge and sustainability practices

Christina used a framework created by Rob O'Donoghue and Heila Lotz-Sisitka (2006) to consider **critical deliberation**, **situated learning**, **proximity experience** and **practical reasoning** as teaching practices which might support 'active and critical approaches to learning'. After having described these teaching practices, Christina examined them further in terms of the 'architectural' factors that enabled or constrained them. She separated these architectural factors into 'cultural-discursive, material-economic and socio-political' factors according to the practice architecture framework developed by Kemmis and Heikkinen (2011).

The first teacher focused on the topic of water quality and water access and availability and human relations with water in South Africa. She supported **critical deliberation** through narratives and discussion about equality of access to water in South Africa. The effect of damming water on river flows and the fish on which local people are dependent to make a living became a complex topic of discussion in the class. She provided **proximity experience** with audio-visuals of micro-organisms in water and the effect of water

Pollution on a South African community. A local proximity experience was an expedition to the local river to test the water quality. She enhanced **situated learning** through using examples of local issues. She explained: "A lot of examples are actually a lot from what happens in our direct environment where learners live; such as garbage and water pollution. Even the issue of abalone poaching and alien plants around their homes". **Practical reason** was encouraged by drawing learners into discussion around practical scenarios. The issue of whether they do and should recycle water at home became a hotly debated topic in class.



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The second teacher's first lesson was a lecture describing human activities detrimental to the environment such as deforestation, carbon emissions leading to the greenhouse effect, and desertification. In the second lesson, he supported **critical deliberative** processes through group research and reporting on these same environmental topics. He argued that this promoted learner involvement, critical thinking amongst learners, and his own insight into what they have actually grasped. He provided a **proximity experience** through a visit to the



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local beach area and river to study water pollution. He argued that contextualisation enables learners to make sense of environmental curriculum content. He often **situated learning** in local examples arguing with learners that: "You are what your surrounding is like. Hence what you do in the community around your house reflects on you especially where environmental issues are concerned". Using strategies to develop **practical reason** he argued the importance of helping learners to think through each step of their responses to environmental concerns. He argued that without probing questions, learners become passive.

Research findings described material-economic constraining factors included CAPS timetable compliance, availability of information and internet access. Socio-political constraints included CAPS prescriptiveness, multiculturalism and learning institution management and governance. Cultural discursive constraints included teacher/learner language difficulties and the 'newness' of environmental knowledge in the curriculum.

Enabling factors included teachers' passion for environmental content topics, and their ability to improvise resources and to navigate a stringent CAPS timetable creatively. Recommendations from the research are ongoing teacher refresher workshops on the environmental content in the CAPS curriculum and its mediation. Also the development of quality educational resources supporting a variety of strategies for enhancing active and critical learning.

REFERENCES

Lotz-Sisitka, H., & O'Donoghue, R. (2006). Situated environmental learning in Southern Africa at the start of the UN decade of education for sustainable development. *Australian Journal of Environmental Education*, 22(1), 105.

Kemmis, S., & Heikkinen, H. (2011, September). *Understanding professional development of teachers within the theory of practice architectures*. European Conference of Educational Research 2011, Berlin, Germany.