GREEN
TEACHING

South African Environmental Education Teacher Development Network
The problem

- Many fragmented initiatives
- A new, content referenced curriculum
- No systemic impact
- National HCD studies showing the need for substantive interventions to strengthen teachers’ knowledge
The Initiative

- Consortium of environmental education partners involved in teacher education ...
  Expanding to a network

Environmental Education Partners
Higher Education Partners
Education Sector Partners
Time line and process so far

- Review of Old Practice: Oct 2010
- Development of Conceptual Framework: August 2011
- Development and Piloting of Materials: July 2012
- Expanding scope of Materials: Dec 2012
Development of Conceptual Framework

- 3 Pilots (PGCE / B.Ed Hons)
- Subject specific knowledge, pedagogy and assessment requirements (specialised)
- Foundational knowledge vs issues or topic knowledge
- Issues or solutions and alternatives?

Know your Subject

Improve your Assessment Practice

Improve your Teaching Practice
**Key Decision**

*Work with CAPS, but adopt a CAPS ++ approach*

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Foundation Phase</th>
<th>Intermediate Phase</th>
<th>Senior Phase</th>
<th>FET (Grade 10-12)</th>
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<tbody>
<tr>
<td>Life Skills Life Orientation</td>
<td>Healthy Living Diversity of Life</td>
<td>Env &amp; Social Conflicts</td>
<td>Health, Social and Environmental Responsibility</td>
<td>Responsible Citizenship</td>
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<tr>
<td>Life Sciences / Natural Sciences</td>
<td>Diversity and Change</td>
<td>Life and Living; Earth Systems and Ecosystems</td>
<td>ESS and Climate Change Materials &amp; Sust. Ecosystems and Diversity</td>
<td>Biodiversity Life Processes Ecosystems</td>
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<tr>
<td>Geography</td>
<td>Adaptation and Change</td>
<td>Water NR Mgt SD and Human Settlements</td>
<td>Mining, minerals and Sustainability Interdependence Settlements and Sustainability</td>
<td>Climate Change Earth Systems Water Resources Mgt Sustainable Development</td>
</tr>
<tr>
<td>Technology</td>
<td>IK &amp; sustainable technology</td>
<td></td>
<td>Green Economies and Technologies</td>
<td></td>
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</tbody>
</table>
Materials Development

GREEN TEACHING

CURRICULUM KNOWLEDGE AND TEACHING PRACTICE
FOR SOUTH AFRICAN TEACHERS

Murray & Roberts

TEACHING CLIMATE CHANGE: INTRODUCTION
By Colleen Wray and Sipho Maber

INTRODUCTIONS CLIMATE CHANGE

Climate change is a very broad, complex, and controversial issue. The field is full of facts, figures, reactions and opinions. But it pulls up a set of disciplines, knowledge fields, beliefs and assumptions that may be called climate change.

You could study, for example, a social or cultural change from a historical perspective or a basic study of the climate system. The world also requires climate change. The social context prepares you to think about complex, political, social, cultural, religious, economic and transport elements that make climate change a place we understand and make sense of climate change from a personal perspective (eg psychological, physical).

Climate change is a matter of concern and providing areas of interest that are not yet
about the greenhouse effect, although this is key to understanding the climate change.

The TEACHING GREEN programme provides a particularly useful contribution to ensuring climate change is a part of climate change.

The TEACHING GREEN programme encourages teachers to understand the complexity of the concepts and ideas involved in climate change. It provides teachers with ways to engage students and support them in understanding climate change knowledge, as they try much beyond CERs complements.
Materials Development and Pilot Testing

- Pilot 1: Teaching Climate Change in Geography Grade 10-12

How to approach teaching of climate change?

Teachers experiences of pilot?

Materials and their use

Interesting insights / important processes
Materials Development and Pilot Testing

- Pilot 1: Teaching Biodiversity in Life Sciences Grade 10-12

How to approach teaching of biodiversity?

Teachers experiences of pilot?

Materials and their use

Interesting insights / important processes
Materials (so far): Core Texts X 3
3 ‘Units’ / Exemplars on Teaching Climate Change

TEACHING CLIMATE CHANGE: INTRODUCTION
By Colleen Vogel and Shanu Misser

GEOGRAPHY GRADE 10-12
Wits University / Colleen Vogel; Delta Environmental Centre, SANBI, SANParks

2. RESOURCE USE
3. RESPONSES TO CHANGE
3 ‘Units’ on Teaching Biodiversity

University of South Africa &
EWT, Eco-Schools & Rhodes
University

LIFE SCIENCES Grade 10 - 12
3 Units on ‘Teaching Water’

University of KwaZulu Natal & Eco-Schools
2/3 Units on Life and Living

TEACHING LIFE & LIVING

University of Stellenbosch

LIFE SCIENCE Grade 4 - 6
Evaluation

• Evaluation instruments design [Green Matter]

• Use of evaluation instruments

• Emerging findings:
  - Teachers knowledge and confidence to teach
  - Assessment support NB; Higher order questions
  - Assessment and Accreditation of the Teacher Education Programme
  - Integration with district DBE processes
  - Worthwhile initiative, changing the way we do TE & EE with schools

• Review of evaluation instruments
Systemic Elements

• Integration with DBE priorities and processes (Business Plan)

• Integration with TE accreditation and professional development systems (SACE / ETDP SETA)

• Integration with national systems of funding (DBE Business Plan)

• New HEQF and TEQF qualifications and knowledge mix framework (knowledge practice standards)
Theoretical Analysis, Research and Development

• Critical realist analysis of piloting, teaching practices and knowledge issues (Biodiversity pilot)

• A social realist conceptual analysis of the knowledge production framework for CAPS (is the knowledge the latest, best available knowledge or are we teaching children old, outdated and incoherent ‘bits’ of knowledge?) Issues of progression, relevance etc.

• Review and analysis of assessment and accreditation systems being used in ETDP SETA from a quality education and learning perspective & best available knowledge of professional development and assessment of professional learning

• Knowledge / Pedagogy / Contextuality / Complexity / ...
Next Steps

• Develop more of the ‘units’ / exemplars
• Expand partnerships (university-environment partner combinations)
• Training of Trainers
• Further sites for piloting
• Formalise and capacitate the co-ordination ‘hub’
• Open Source Materials System