

LEADERSHIP NETWORKS FOR CLIMATE CHANGE

Thinking like a scientist

Curriculum
Resource

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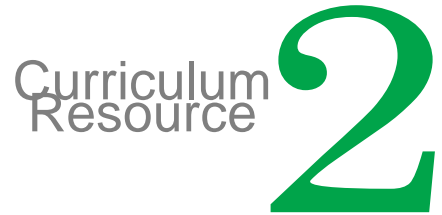
AUSTRALIAN
LEARNING
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Promoting excellence in higher education

Thinking Like a Scientist

Considering cross-discipline commonalities

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Themes

- Cross-disciplinary collaboration
- Team-teaching
- Student-led learning
- Interdisciplinary inquiry

Description

As a first year zoology unit, one of the primary learning objectives of this subject is to get students' to begin to 'think like scientists'. This activity was aimed at helping students develop the ability to read, interpret, and comprehend scientific papers and data from both a zoology and a human geography perspective.

Within this unit students were asked to read from a series of scientific papers that address the ways in which climate change may be affecting different terrestrial and marine species around the world. The idea was to give students an appreciation of how climate change may affect species in different ways (potentially both positive and negative) and the complex ways these effects may impact on processes at the ecosystem level. Based on their readings, students filled out a large database created for the class, where they had to break down the scientific article in terms of its content, description of climate change impacts, impact on species, geographic region and referencing content. Since the initiation of this project in 2008, this database has grown to over 1200 references and resources.

Some students have shown interest in using this database for further research, or for dissemination into other areas of study such as primary school education. Prior to the delivery of this particular activity, the teachers from zoology and human geography got together and matched zoology focused papers with an additional series of academic papers looking at how humans have shown similar responses to climatic change processes, or how humans are managing, responding to, or being additionally affected by the processes of climate change. Students were asked to read these comparative papers and take place in a class discussion aimed at exploring the similarities and differences between the responses of humans and the other animals investigated.

The idea behind this exercise was to highlight how a variety of species across the planet - including humans - are being affected by and responding to climatic change. It was then possible to explore how human responses may or may not be similar, or linked, to the responses of other mammals in the animal kingdom. Students were required to complete an assignment in the form of a mini-essay where they could choose to explore the links between effects on humans and other humans in more detail – they were further encouraged to seek support from academics within the two Schools of Zoology and Geography & Environmental Sciences.

Reflections

This activity brought together academics from two usually separated Schools to co-teach a topic relevant to both disciplines.

This had three major outcomes:

- 1. It provided coherency to the students learning across units/subjects and allowed integration of information from sources often separated in teaching (humans versus “animals”).*
- 2. It provided an opportunity for students to engage with academics and ways of thinking from outside their own unit or discipline. While there is some overlap with students taking units in the two Schools, a large do not otherwise get exposed to other staff.*
- 3. It provided a platform for academics to teach together and to learn from one another's disciplines. Importantly, it also provided an opportunity for academics to reflect on their teaching style and to discuss pedagogy outside their School structure. In terms of teaching climate change to students, it provided the social layer to predominantly zoology students and made them realise that climate change impacts on animals cannot be understood in isolation to effects on humans.*