

“I fear Kiribati will be gone forever”

Exploring eco-literacy in one Social Sciences classroom

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KEY POINTS

- The students we teach in New Zealand classrooms face uncertain futures and the challenge of living with the effects of human-induced climate change.
- Social Sciences provides a specialist form of eco-literacy which helps students to make sense of environmental challenges.
- The 3D eco-literacy model can help identify strengths and weaknesses of eco-literacy in Social Sciences teaching.

This article describes and discusses a unit of work taught by Maria Iki, a Social Sciences teacher at James Cook High School in South Auckland. The unit was taught as part of the TLRI project Tuhia ki Te Ao—Write to the Natural World. The project is concerned to develop students’ eco-literacy and to help them to inform their environmental identities. This article: (1) provides readers with an account of how the issue of sea-level rise in the Pacific Island of Kiribati can be understood through a model of 3D eco-literacy; (2) offers Maria’s reflections on the challenges involved in teaching the unit; (3) discusses the 3D eco-literacy developed in the unit; and (4) ends with some comments about how Maria plans to develop the unit in the second iteration of the project.

Introduction

There is no catchall definition of *eco-literacy*, although within this article it is defined as: recognising the meanings and signs associated with nature, landscapes and environments, and understanding the stories and narratives that shape social attitudes to them. In our Teaching and Learning Research Initiative (TLRI) project we have been exploring the potential of Bill Green’s 3D literacy model which, by virtue of being a holistic way of representing literacy practices, challenges a purely skills-based or “operational” approach (Green, 1988; Green & Beavis, 2012). Eco-literacy means something different in each learning area of the curriculum. The “operational dimension” of literacy for Social Sciences would include the technical terminology needed for discussing and analysing environmental and social issues, and the capacity to use this terminology to represent ideas. Of course this is important, but on its own it is limited. Green’s concept of 3D literacy also includes cultural and critical literacy.

Applied to Social Sciences, *cultural literacy* would suggest that students are able to recognise the themes, issues, and motifs that society deems to be significant. For instance, students might recognise that the world maps that hang on classroom walls are based on arbitrary projections, and that there are arguments about which projections are most appropriate.

Critical literacy takes a broader perspective still, and involves an understanding that society and the categories of which it is comprised are constructions, and that dominant ways of thinking about the world are often shaped by those who hold economic and political power. Understanding this allows for the possibility of social and political transformation.

Our project team has adapted Green’s model to explicitly reference *environment* and *ecology* as well as culture so that the model becomes “operational, *enviro-cultural* and *eco-critical*”. Green’s model has helped us to think about the social, cultural, and environmental contexts and effects of literacy in particular locations (see Table 1 in Matthewman et al., this issue).

Having summarised the three dimensions of eco-literacy above the rest of the article is organised as follows: the next section presents an account of Kiribati—a small, low-lying nation in the Pacific Ocean that is threatened by sea-level rise resulting from human-induced climate change—in relation to the model of 3D eco-literacy. This is followed by a synopsis of the unit of work. Next, Maria (who taught the unit) offers her reflections about the successes and challenges involved in teaching the unit and developing eco-literacy. To conclude, we evaluate the teaching and learning in the unit using the model of 3D eco-literacy.

The future of Kiribati

Over a 6-week period in 2016, Year 9 (ages 13–14) students at James Cook High School attended Social Sciences lessons in which they learnt about the impending fate of Kiribati. This would have been a compelling story for a Social Sciences class in any part of the world, but its significance was heightened by the fact that many of the children in this classroom in South Auckland hail from, or have parents who migrated from islands in the Pacific Ocean.

To introduce the unit Maria taught we will briefly describe the operational, *enviro-cultural* and *eco-critical* literacy dimensions involved in understanding the plight of Kiribati.

Operational

In Social Sciences, operational literacy involves the teaching and learning of important terminology, nomenclature, and facts that are useful in describing and explaining phenomena. For example, Kiribati is made up of 32 atolls and one raised coral island. The largest is called Tarawa and it is where most of the people live. It consists of three island groups—Gilbert Islands, Line Islands, and Phoenix Islands—with a total land area of 811 sq. km. The estimated population of the Republic of Kiribati in 2009 was 112,850, with 21 of the 33 islands inhabited. About 50,000 live on Tawara, which means that is densely populated. Kiribati is a rough transliteration of Gilbert, which was the collective colonial name of the islands. It was declared a British protectorate in 1892 and became the Republic of Kiribati in 1978.

Enviro-cultural

For Social Sciences, enviro-cultural literacy involves being able to recognise key concepts and ideas that are useful in understanding issues and events. For example, by Western standards, Kiribati is “underdeveloped”. There is no industry, no arable land (the ground is all white coral dust), and most of the fish stock gets taken by Korean and Taiwanese trawlers. The result is that essential services are lacking. Rates of diabetes, death in childbirth, and infant mortality are high. The place is missing on any tourist map of the Pacific, with infrequent flights and connections. In 2015, the Asian Development Bank, which co-ordinates development aid in the region, commented that:

Kiribati is extremely vulnerable to external shocks due to its vulnerability to climate change, dependence on imports, and reliance on income from overseas sources. Development of the country’s private sector has been constrained by high costs of doing business, the size and scale of the economy, and the country’s widely dispersed population. (n.p.)

To make these rather abstract statements more concrete and meaningful for students, Maria built her unit of work around the high-profile case of Ioane Teitiota, who moved with his wife to New Zealand from Kiribati in 2007. The couple’s three New Zealand-born children were not entitled to New Zealand citizenship under the Citizenship Act 1977. The family remained in the New Zealand illegally following the expiration of their visas in October 2010. To avoid deportation, Ioane applied for refugee status “on the basis of changes to his environment in Kiribati caused by sea-level rise associated with climate change”. A refugee and protection officer declined to grant refugee status, and this decision was upheld by the Immigration and Protection Tribunal.

Ioane subsequently sought leave from the High Court to appeal the Tribunal’s decision, but his application for leave to appeal to was declined by both the High Court (in 2013) and Court of Appeal (in 2014). In July 2015, the Supreme Court upheld the decisions of the lower courts and dismissed Ioane’s application for leave to appeal (Dastgheib, 2015).

This example gives an indication of the rich variety of enviro-cultural knowledge that is required to make sense of the issue of sea-level rise in Kiribati. For example, grasping the notions of “development” and “levels of development”, and how these might be measured or assessed. Likewise, the notion of aid and dependence, the operation of complex climatic systems and how human activity interacts with them, the notions of nationality, belonging and citizenship, and the role that the law plays in deciding who lives where and who is able to move from one place to another. Beyond that, of course, are ideas of colonialism and how events in the present are shaped by history.

Eco-critical

In Social Sciences, eco-critical literacy involves being able to stand back and seek to enquire into many of our taken-for-granted ways of thinking about the world, and asking questions about whether and/or how things might be changed. The Kiribati example must be viewed as one part of a larger or regional issue. For example in May 2016 the *New Zealand Herald* reported on “the vanishing islands of the Pacific”. The focus here was on the Solomon Islands, where sea-level rises have led to the dissolution of villages and the relocation of people who have sought refuge on other, uninhabited islands or have sought to relocate inland. This raises important questions about justice, fairness, and power. Students might reasonably ask about why this is happening to these people, in this place, at this time? Answering these questions requires the eco-critical dimension of 3D eco-literacy—the ability to be able to see how questions of history, economy, and power have conspired to make Kiribati a vulnerable place. This is perhaps the most challenging dimension of literacy for teachers and students. As Rob Gilbert (1984) argued in *The Impotent Image*, the social subjects as taught in schools tend to offer a view of the world that seems fixed, that assumes the existence of consensus on how social relations should be organised, and suggests to students that politics is best left to “experts”. For the issue of how sea-level changes are affecting Kiribati and its people, critical eco-literacy entails: (1) an understanding of how, at a global scale, humans are changing physical systems, and that this is impacting the local scale; (2) an acknowledgement of the ways in which economic systems have led to large divisions between the “developed” and “developing” world. In

this case, it is clear that countries such as New Zealand and Australia are developed, and that the Pacific Islands’ “underdevelopment” is related to this.

Although we have organised this section around three distinct dimensions of eco-literacy, this should not be taken to imply that there is a linear progression from one form of eco-literacy to another. It is not a case of starting with terminology, nomenclature, and known facts, proceeding to consider meanings, values, and mutual understanding before going on (if there is time) to introduce critical perspectives. In practice, it is likely that all three dimensions occur simultaneously. For instance, it could be that the perception of something as being unfair or unjust (eco-critical) may lead students and teachers to undertake inquiry that requires operational and enviro-cultural literacy. Curriculum design involves making decisions about what counts for valuable educational activity. In planning the unit, Maria made decisions based on her understanding of what was desirable and pedagogically feasible in relation to the school and students. In Maria’s Discussion, Maria offers some reflections on what happened as she taught the sequence of lessons.

BRIEF SYNOPSIS OF UNIT

This unit is about the ways in which Kiribati is threatened by sea-level rise caused by human-induced climate change and the ways in which people are responding to this threat.

Inquiry questions:

- What is happening to Kiribati and other Pacific Islands?
- What are the causes of the problem of sea-level rise?
- How are people and governments responding to the issue of sea-level rise?
- What is the impact of sea-level rise on people in Kiribati?
- How can we help?

Lesson sequence:

- 1 Teachers and students explore the history of migration in the Pacific region, showing how the islands were the stopping points for a culture based around movement.
- 2 Students are introduced to the “economy” of the Pacific Islands. They look at maps of the Pacific region and how it is dominated by Australia and New Zealand, where there is a co-dependent relationship. The traditional ‘island’ life has been interrupted by modern life, as wealthy people from Australia and New Zealand came to see the islands as a place to have their second homes or to visit as the tourism industry expanded from the 1960s. Many islanders left their homes, often to find work in the growing economies of Australia and New Zealand.
- 3 Recent migration is less a choice than a necessity, as island people are displaced from their homes. The

cause of this is the rising sea level which has resulted from human-induced climate change. Recent reports from the IPCC point to the imminent and present danger of this process, which was dramatically brought home by the plight of the Kiribati islanders who sought refuge in New Zealand (Killalea, 2016).

- 4 Students take part in a focused discussion of the issue, which culminates in writing a letter to the New Zealand Prime Minister to consider the plight of the Kiribati refugees.

Maria’s discussion

The first thing to say is that this was quite a challenging Year 9 group! Getting students to focus on the lessons required all my management strategies, and when their interest and attention had been gained, some students tried to resist writing anything down. On the other hand, students got interested and were not afraid to share their ideas and views.

In addition to the normal challenges of teaching such a lively class, there was the fact that, because the majority of students had “island heritage”, they became very emotional about the Kiribati issue. The issue felt close to home and most of them could relate to it. In fact, many students expressed anger when they started talking about refugees and wanted to know “why isn’t John Key helping these people”. They would say things like “the i-Kiribati¹ are like family to us” and because they have i-Kiribati friends at school they made reference to their friends in class, wondering if sea-level rises were the reason why they and their families moved to New Zealand. A really significant moment was when one student came to my classroom at lunch-time with one of his friends from another class. The friend explained that his parents were trying to help other members of their extended families to come to New Zealand but that some of his uncles and aunts were reluctant to come. I think that for some of the kids in the class it’s that sense of belonging to a Pasifika family/whānau. They see their Kiribati friends as part of their family in terms of high school.

As I mentioned, some of this class dislike writing, and I wondered how successful the final task of writing letters to Prime Minister John Key would be. However, the outcome really surprised me. The task caught their imagination and they put genuine thought into it. To me this suggests that overall, the unit gave students the chance to express or to explore how their own culture thinks about and values the island environments from which they came. Many of the students were concerned about how their culture would be threatened by sea-level rise caused by global warming.

One of the challenges for me in teaching the unit was that I assumed that students had previous knowledge of the issue of global warming and that we could quickly

move to focusing on Kiribati. In the event we spent a good deal of time going back to “operational literacy” to explain whether it is the sea-level rising or the islands sinking. YouTube clips were a great help here. It was one of the best moments in my career as a teacher when we received a letter from the Prime Minister’s office in response to the letters that we sent.

Discussion

Eco-literacy matters because it points to the ways in which language serves to construct people’s ecological values rather than offering a transparent window on the world (Stibbe, 2015). Eco-literacy is imperative at a time of “environmental crisis”, since too often students in schools are presented with the idea that the contradictory projects of rapid economic growth (based on high levels of personal consumption) and environmental stability can be reconciled. The purpose of eco-literacy is to help students to examine that claim, and the value of the model of 3D eco-literacy discussed in this article is that it provides a framework for teachers to evaluate their own planning and teaching.

As the unit unfolded, it became clear that the main form of 3D eco-literacy evident in this series of lessons was enviro-cultural literacy. As Maria noted, students became quite emotionally involved in the plight of the *i-Kiribati*. They understood the significance of place, and what a loss of that place would mean to people. As one student said, “I fear Kiribati will be gone forever”. We see this an example of enviro-cultural literacy because it involves understanding the meaning of environments to particular groups of people, and how an issue such as sea-level rise, which scientists might study as an empirical problem, can also be understood in terms of the images, beliefs, and ideas that individuals and groups hold about a place. A memorable moment was the lesson discussion that surrounded the proposal for the *i-Kiribati* to purchase an area of land in neighbouring Fiji to which they could resettle if and when sea-level rise requires them to leave home. Although this could be viewed in terms of rational terms of choice and viability, a number of students expressed their doubts on the grounds that this would still not be “home”.

At the same time, in evaluating the series of lessons we recognise the need to ensure that this enviro-cultural literacy is supported by the type of operational literacy that provides the basic building blocks of understanding the issue of environmental change in Kiribati. Thus, aspects of operational literacy, such as locating Kiribati on a map of the Pacific, recognising important terms such as “Equator”, landscape features such as “Atoll”, and concepts such as “Longitude” and “Latitude” were often used hesitantly by

students and with little confidence. There was little in the lessons of the type of context (geography, history) of the type described at the start of this article. This was because of the choice that Maria made, as a teacher, to emphasise those aspects of the Kiribati issue that would resonate with and engage students’ interest. When we consider the extent to which eco-critical literacy was present in this lesson sequence, an obvious point is that students learnt something about the political process through writing their letters to the Prime Minister of New Zealand. When first presented with this idea, some students expressed doubt that it could have much effect. Maria worked hard with the students to ensure that their letters were the “best they could be”, and they were rewarded with a reply to the class as a whole from the Prime Minister’s office.

These points can be illustrated in relation to how one student—Tanya—experienced the series of lessons. Like most students in this class, Tanya self-identified as an “islander”. She described herself as “Tongan and half-Asian”, despite having lived most of her life in France. When the interviewer prompted her to recall the lessons in Social Sciences, she talked at some length about how she had learnt that “our earth is polluted with rubbish and like the heat”. She elaborated:

...like you know how that thing around the world and there’s like currents protecting us from the sun, you don’t get that much heat well it’s going smaller and smaller because of like the cars and that. You know it pollutes the whole earth and then like it gets thinner and thinner and the sun starting to burn some places.

This is a revealing and contradictory passage: it suggests to us an emerging environmental awareness and the length of the comment indicates that Tanya is quite concerned. However, the reasoning of cause and effect and understanding of the processes that threaten Kiribati are confused, and any learning about a specific place or location has been abstracted to a higher plane, where much of the detail is replaced with a more general feeling of “it’s bad”.

Tanya’s relative effusiveness in this section of the interview was at first puzzling to us, since in lessons she was often quite reluctant to engage. However, in her letter to Prime Minister John Key, Tanya argues passionately that the New Zealand government should “help them [*i-Kiribati*] relocate from Kiribati to New Zealand so they can have a better future for their family”. She notes that there is a possible option to relocate to Fiji, but that many *i-Kiribati* are reluctant to leave because they have “got history”. In addition Tanya calls for traditional aid in the form of money to help the *i-Kiribati* to buy “proper food” and “give their children a better education”.

We present this account of Tanya’s emergent environmental identity in order to show some of the

complexities involved in teaching 3D eco-literacy. As the statements from Tanya’s letter suggest, the enviro-cultural dimension of her literacy is quite developed. However, the elements of operational literacy which will be essential for her future participation in society’s debates around environmental issues are at present underarticulated in interview.

Her statements in this respect need to be supported with the “building blocks” of facts, nomenclature and concepts that are provided by operational literacy. These will be important if Tanya is to be helped to develop an eco-critical dimension to her understanding.

It is important that the discussion here has more implications for teachers than it says about Tanya. In the second round of teaching this unit, it was interesting to note that Maria placed much more emphasis at the start of the unit on embedding and reinforcing the operational dimension of eco-literacy. In observing the lesson, part of which involved students locating and naming Pacific Islands, the class were supported to recall the term for “the line that circles the earth and divides the northern and southern hemispheres”. Maria is also planning to extend the eco-critical dimension of the unit of work, through supporting students to make a radio programme to be broadcast on a local radio station in South Auckland.

Conclusion

This article has reported on one unit of work taught in the TLRI project Tuhia ki Te Ao and it has shown how the 3D eco-literacy model can help to identify strengths and weaknesses in the teaching and learning. Our intention is to suggest that a focus on planning in all three dimensions of eco-literacy will help students to develop confident and informed environmental identities.

Notes

1. I-Kiribati is the term used to describe people who live in, or hail from Kiribati.
2. To use the phrase in Sasha Matthewman’s introduction to this series of articles.

References

- Asian Development Bank (2017). Kiribati. Retrieved from <https://www.adb.org/countries/kiribati/main>.
- Dastgheib, S. (2015, September 22). Kiribati climate change refugee told he must leave New Zealand. *The Guardian*. Retrieved from <https://www.theguardian.com/environment/2015/sep/22/kiribati-climate-change-refugee-told-he-must-leave-new-zealand>
- Gilbert, R. (1984) *The impotent image: Reflections of ideology in the secondary school social subjects*. Brighton: Falmer.
- Green, B. (1988). Subject-specific literacy and school learning: A focus on writing. *Australian Journal of Education*, (August) 32, 156-179.
- Green, B., & Beavis, C. A. (2012). *Literacy in 3D: An integrated perspective in theory and practice*. Victoria, Australia: ACER Press.
- Killalea, D. (2016, May). Villages erased: Islands wiped off the face of the Earth. *New Zealand Herald*. Retrieved from http://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=11636931
- Stibbe, A. (2015) *Ecolinguistics: language, ecology and the stories we live by*. London: Routledge.

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