

Words and worlds: New Directions for Sustainability Literacy

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Abstract

Sustainability Literacy is a term which is usually used metaphorically to refer to the knowledge and skills necessary to contribute to a more sustainable society. This paper takes the term literally, describing an approach to sustainability literacy based on the powerful role that language plays in forming social structures, and the consequent impact of those structures on the sustainability of the society. The approach has already been put into practice in the *Language and Ecology* course taught at the University of Gloucestershire, which was highly commended in the Green Gown awards (2007) for its contribution to education for sustainability. The paper describes the theoretical approach to sustainability literacy the course is based on, some details of the course itself, and the reaction of students. The conclusion is that an approach to Sustainability Literacy based on critical awareness of discursive construction has potential to help students understand the ways that society is structured (reading the society) and contribute to the transformations necessary for society to become more sustainable (writing the society).

Introduction

In September 2006 the University of Gloucestershire launched a new first year module entitled *Language and Ecology*. The idea of a sustainability course focusing on language and ecology is often met with blank stares of incomprehension – just what is the connection between language and ecology? It does not take many steps to get to that connection, however. Ecology is the interaction of organisms with each other and with the natural environment. If we are interested in the sustainability of human societies, then the focus is on the interaction of *humans* with each other, other organisms, and the physical environment, i.e, human ecology (Moran 2006, Steiner 2002, Marten 2001). The primary way that humans interact with each other is through language, and language persuades people to behave in ways which have differing impacts on the ecosystems which support life.

On one hand, the language of advertising is persuading people to purchase unnecessary material products, and the language of economics is backing this up by suggesting that in doing so they are improving the economy, giving people jobs, and generally improving the quality of life. On the other hand, the language of environmentalism is telling people about the impact that over-consumption is having on the ability of the earth to support life in the future, and a range of different forms of language are persuading people that they can enjoy life more through non-damaging pursuits like appreciation of friendship and nature. Charting a course in life between the differing persuasive messages that surround us requires critical awareness of the powerful interests operating behind those messages, and the ecological consequences of following

them. This provides an important new dimension to the emerging concept of ‘sustainability literacy’.

Sustainability literacy

The term ‘Sustainability literacy’ follows in the footsteps firstly of ‘environmental literacy’ and then ‘ecological literacy’. The trajectory has been away from a narrow focus on environmental pollution, towards wider concerns with how the environment can provide basic necessities for current and future generations. As a consequence, the trajectory has also been for definitions of the new form of ‘literacy’ to become increasingly less specific and more general in scope. To illustrate, consider Orr’s characterisation of ‘ecological literacy’, which represents a half-way point:

Ecological literacy...implies a broad understanding of how people and societies relate to each other and to natural systems, and how they might do so sustainably... [It also implies] an understanding of concepts such as carrying capacity, overshoot, ...thermodynamics, tropic levels...magnitudes, rates, trends of population growth, [and] species extinction...Ecological literacy requires a comprehension of the dynamics of the modern world. (Orr 1992:92-95)

This is both quite specific in detailing the concepts from ecological science that students should be familiar with, as well as being general in insisting on a ‘broad understanding of how people and societies relate to each other and to natural systems’. In contrast, the more recent *Forum for the Future* ‘definitional framework’ of sustainability literacy is at a far more general level. The highest overview of the framework is as follows:

- Understand the need for change to a sustainable way of doing things, individually and collectively
- Have sufficient knowledge and skills to decide and act in a way that favours sustainable development
- Be able to recognise and reward other people’s decisions and actions that favour sustainable development (Forum 2004)

Although there is a danger that over-generalised definitions can lose their meaning by being all-encompassing, there is the benefit that students from more and more disciplines can be included in the common quest for a sustainable future. The term ‘literacy’ itself helps reflect this broad application, because *all* students, no matter what subject they study, are required to leave university being ‘literate’. The HM Government’s *Securing the Future* plan states that ‘We need to make “sustainability literacy” a core competency for professional graduates’, which represents sustainability skills as a universal requirement in the same way that reading and writing skills are. There is, however, an important interrelationship between the two forms of literacy.

Taking literacy literally

Sterling (2005) asks the question of ‘why this debate has picked up the word ‘literacy’ which is of course normally associated with reading and writing skills’ and answers it by stating that ‘It is of course a metaphorical use, employed to connote the ability to understand (‘read’) and influence (‘write’) society’. There is, however, an important sense in which the statement is not metaphorical, since so much of our understanding of society comes from things that we read, and writing is one of the primary ways that society can be influenced.

Literacy, as it is defined in modern linguistics, is not a binary category of can/cannot read and write, but a question of the different forms of reading that people engage in, and the different forms of writing they are capable of (Barton 2006, Maybin 1994). Sustainability literacy taken literally means an ability to read critically, in ways which connect what is being read with the ecosystems which support the lives of current and future generations. It also means being able to write in engaging and creative ways which can contribute to social transformation towards a more sustainable society.

Some brief examples are as follows: a) when reading a newspaper article which represents a ‘disappointing’ drop in pre-Christmas sales, or the ‘good news’ that airline companies have increased profits, a reader literate in sustainability will be able to interpret the underlying model of unlimited economic growth behind the evaluative language used, and be aware of its ecological consequences. b) a sustainability literate person will recognise that a tag line in an advertisement which reads ‘Live life to the full’ contains the presupposition that the reader of the advertisement is not currently leading a fulfilling life, and understand how this links to the general role of advertising in creating dissatisfaction and encouraging purchase of unnecessary products. c) when reading agricultural discourse which represents nature linearly and mechanistically, the literate reader will be able to recognise the oversimplification of complex ecosystems involved, and know about the unsustainable agricultural practices which are often premised on such oversimplifications. Critical reading along these lines could help readers resist ideologies and social models which have negative impacts on the sustainability of society, and start them on a journey towards discovering and promoting more sustainable models.

When it comes to writing, a sustainability literate person will have the skills to write in ways which avoid some of the simplistic and damaging social models which underlie unsustainable societies. And more than this, they will be able to write in ways which instantiate new constructions that have the power to encourage people to act in more sustainable ways. As St Claire (2003) writes, ‘In the case of environmental literacy for adults, this means developing and participating in the social practices likely to change the way our societies think about and act upon ecological issues.’

Rachel Carson, for example, was a marine biologist who presented the facts about DDT and other pesticides not in the usual dry jargon of objective science, but in powerfully lyrical ways which captured people’s imagination. Her message was simultaneously an accurate and scientific description of the destruction that was occurring, and an evocation of the beauty and preciousness of the life that was under threat. Carson’s (1962) book *Silent Spring* was instrumental in turning environmentalism into a widespread popular movement, partly because of the revelations it contained, but

mostly because the writing style appealed to people's deeply held value systems as well as their intellect.

Although *Forum for the Future* mentions the ability 'to talk to others in positive and engaging ways' about sustainability (Forum 2004), and GEES (2007) mentions the importance of 'skills in communication', critical reading and creative writing skills rarely play an important role in ESD in practice. Despite the term 'literacy', the reason why literacy practices themselves tend to be relegated to the margins may be because of the artificial distinction between 'doing' and 'talking' which is often drawn by sustainability educators. For instance, Orr (1992:92) writes that 'Environmental education ought to change the way people live, not just how they talk.'

Language, however, can be seen as a form of 'doing' - as a social practice (Fairclough 1992). International treaties, climate conferences, laws, economic transactions, and advertisements all revolve around language, as does the structuring of the institutions that make up society. Through changes in language, institutions can be altered, treaties can come into force, boundaries can be redrawn, and the structure of systems such as economic systems can be transformed.

To give just one example, the word 'cost' in economic discourse is used primarily as a financial variable, but there is pressure now on economic discourse to use the term with a wider scope to include the relatively new concepts of 'environmental costs' and 'social costs', i.e. the 'triple bottom line'. These linguistic changes can have an impact on decision making, with potential social and ecological benefits as a consequence.

Beyond language

In addition to language, other semiotic modes have consequences for sustainability, including drawings, photography, music, material objects such as toys, and multimodal texts such as films and computer games. Other semiotic modes can be analysed in much the same way as language, as Kress and van Leeuwen (2006) show for visual images and van Leeuwen (2005) shows for a range of social semiotic systems.

An example of an important visual image was the photograph of planet Earth taken by Apollo 8 in 1968, which shows the curve of the moon in the foreground and the Earth small in the background, surrounded by a black void. This image helped start the sustainability movement, because it forced the viewer into a radically different way of viewing the planet, both literally and metaphorically (Sachs 1999). On the other hand, there are images representing consumerism as the path to happiness in advertising, computer games which glorify cars, speed, and weapons, and toys such as Barbie and her accessories which introduce children into the world of consumerism. It is important, then, for students to become critically aware of visual images and other semiotic forms in addition to language.

In expanding the notion of text to include visual images and other semiotic modes it essential not to go too far, as certain post-modern theories seem to have done, and start to claim that everything in the world is ultimately text. Stables and Bishop (2001:90), in their discussion of environmental literacy, have perhaps gone too far in offering 'a view of the environment itself as text'. They propose that:

The environment, insofar as it only 'is' what it 'means to us', is a cultural/social construct. (p93)

Insofar as the features of the biophysical world reveal themselves through the signs we attribute to them, we could be said to read the environment. (p90)

The word 'insofar' in both these sentences a tricky one, because it glosses over a history of debate about semiotic determinism. If human signs influence how aspects of the biophysical world 'reveal themselves' to such an extent that there are important consequences for sustainability, then this implies a strong form of linguistic determinism along the lines of the Sapir-Whorf hypothesis – something which has been almost universally rejected by linguists (Stroinska 2001, Gumperz and Levinson 1996). The over-extension of semiotic determinism has also led to strong attacks by ecologists:

the world, including its living components, really does exist apart from humanity's perceptions and beliefs about it...certain contemporary forms of intellectual and social relativism can be just as destructive to nature as bulldozers and chain saws (Soulé and Lease 1995:xvi)

Sociology...[has]...often taken for granted a biological world that is viewed...as possessing only a discursive reality, located within the realm of human language - surely the ultimate in anthropocentric hubris. Kidner (2001:9)

An essential part of sustainability literacy is therefore the ability to distinguish aspects of the world which are created discursively by social convention, and can therefore potentially be transformed through alternative representations, and those aspects of biophysical reality which are beyond semiotic systems.

The Language and Ecology module

The Language and Ecology module, taught in the Humanities Department at the University of Gloucestershire for the first time in 2006, attempts to put the concept of sustainability literacy described above into practice in a Higher Education context. This section briefly describes the course itself, the feedback from students, and subsequent developments.

The socio-linguistic aspects of the course are based on social construction theory (Burr 2003, Gergen 2000, Bourdieu 1991), theories of language and social change (Fairclough 2003, 1992, 1989), Critical Language Awareness (Fairclough 2003, Ivanic 1993), and ecolinguistics (Stibbe 2005, 2004, Mühlhäuser 2003, Fill and Mühlhäuser 2001, Goatly 2000, Harré et al 1999). Discussion of the impact of social structures on ecosystems is conducted within a human ecology framework based on a wide range of works including Moran (2006), Daly and Farley (2004), Steiner (2002), Capra (2002) and Naess (1990).

The course, however, does not begin by 'presenting' students with a theoretical framework, because it would be disingenuous to suggest that there was one 'right'

framework for sustainability, and confusing and time-consuming to present advanced debates in social construction theory and human ecology. Instead, students are encouraged to develop their own frameworks over time as they come across new perspectives and gain experience of social and natural systems for themselves in the changing conditions of the 21st century. Imaginative exercises are used to help them start to build a framework. The first exercise is as follows:

Imagine the world from the perspective of an eagle – sharp eyes and no language. The eagle flies across borders, over the heads of presidents, peers into the windows of court rooms and class rooms. The eagle has very sharp eyes, but what can she not see? In other words, what aspects of the world belong to social reality constructed through language and consensus, and what aspects are part of biophysical reality beyond symbols? [from *Language and Ecology* course materials]

To the eagle, of course, there are no national borders; there is nothing to distinguish the president from any other humans; the judge, defendant and lawyers are just animals making noises, and there is no distinction between teacher and student. In this way students start to get an idea of how language constructs intuitions, positions, hierarchies, and nations. This is, of course, highly simplistic, but together with other imaginative exercises provides a starting point in understanding the complex relationship between words, symbols and social structures.

Sustainability literacy requires not only a social framework to analyse the role of language in building social structures, but also an ecological framework to assess the impact of those social structures. Imaginative exercises are again used to help students start to build their framework. The first of these involves asking the students the simple question ‘What is wrong with artificial grass?’ A few typical responses to the question are as follows:

- a) It does not allow plants, bees, birds and other life forms to grow and live
- b) It requires large amounts of fossil fuels to produce, and involves waste during production and disposal
- c) It is uniform in shape and colour and does not change in the seasons. It therefore does not allow humans to appreciate the beauty and variety of nature.

Students are then encouraged to translate their insights into a normative form, for example:

- a) The flourishing of life is important for its own sake, and should not be unnecessarily stifled
- b) It is important not to waste resources or produce unnecessary waste, particularly in cases where natural systems could supply all the energy and materials required.
- c) The appreciation of the natural world around us is important for human wellbeing

The statements that the students come up with form the beginning of a framework which they will continuously adapt and evolve in the light of their direct experience with human and natural systems, and, importantly, in response to texts they read and analyse.

After establishing the foundations of a theoretical framework, the course moves on to present students with a series of case studies of critical awareness in action. The case studies are analyses of discourses which play a role in shaping the social world and have an important impact on the sustainability of society (some of these case studies are available online at www.ecoling.net/journal.html).

The case studies are presented under three titles: a) 'destructive discourses', which are common ways of representing the world which encourage unsustainable behaviour such as consumerism or damaging agricultural practices, b) 'counter discourses' which are mainstream discourses such as environmentalism and ecology, which attempt to ameliorate ecological destruction but are often based on similar assumptions to destructive discourses, and c) 'alternative discourses' which are drawn from a wide range of sources and represent the world in ways which break free of the assumptions of destructive discourses (including lyrical science writing, indigenous sources, nature poetry, journalistic texts, and ecologically-based business writing). Discourses are categorised as 'destructive', 'counter' or 'alternative' according to how hidden messages within the discourse align with the normative assumptions of the ecological framework.

Students carry out their own critical analysis of a wide range of everyday texts, classifying them according to their own ecological framework, in a series of active learning exercises conducted in class and for assignments. Evaluation of the module suggests that students found the process 'eye-opening', that they felt that they had gained new awareness of the texts which surround them, and had gained insights into the implication of those texts for ecosystems. Feedback included the following comments:

fascinating, made me think more deeply, definitely changed how I look at things around me, valuable, enjoyable, relevant to everyday life and my life in the future, changed the way I perceive language, I am now more critical about language, it has changed the way I read, eye-opening, I'll be able to really apply what I've learnt in my job later, I read newspapers differently now, this course has made me realise the power and impact that language can have, I've learned a lot, insightful, this course has really captured my interest, I am more aware, I think EVERYONE should take this module, a positive surprise, excellent, a great insight into how language and ecology come together, really opened my eyes, I was amazed, really useful, It has made me take notice of the effects on the environment of language used in a range of discourses that I wouldn't have noticed otherwise

In addition, although there was no explicit advice in the module about living sustainability, all students indicated that the module had already affected their lifestyle or may potentially affect it in the future. Comments include the following:

caused me to look at ways to change the world, more conscious of my own impact on the environment, made me think more about the environment and what I can do to help, will become more environmentally friendly and sustainable, more aware of

my responsibility to our environment, will take more care in everything, [start] a more sustainable lifestyle, [start] consuming ethically, do more to help environment, begun to shop differently already, am much more aware of my surroundings, will be more aware of what products I am buying in the future, this course has opened my eyes to a certain extent and will influence my lifestyle, I will... promote /encourage environmentally friendly behaviour to all people I know!, this course has changed my attitudes

Subsequent Developments

A unique feature of the Language and Ecology course was that students were invited to contribute feedback, comments and articles to an international research forum (the *Language and Ecology Research Forum* www.ecoling.net/courses.html). This resulted in publication on-line of a range of comments and articles by students, and three of the students' articles were later published in the on-line journal *Language & Ecology* (Gargan 2007, Slater 2007, Williams 2007).

Insights on the role of active learning in Education for Sustainability from the *Language and Ecology* course were shared in the *Centre for Active Learning* 'Active Learning and Sustainable Development' swapshop in January 2007 at the University of Gloucestershire. This swapshop brought together active learning perspectives on sustainability from a wide range of modules taught at the University and led to the publication of the book *Greener by Degrees* (Roberts and Roberts 2007). The book includes a chapter on active learning for sustainability literacy based on the principles of *Language and Ecology* (Stibbe 2007), as well as a chapter co-written by students about their experience of the module (Gargan et al 2007). The student chapter includes the following comment on active learning for sustainability:

The active learning in the module made it interesting, lively and inspiring. We discovered links between ecology and language in many different sources, such as popular magazines, the food industry and literature from across the world. The diversity was amazing: every week, a new façade of our own culture and of cultures worldwide was revealed. (Gargan et al 2007)

In 2007, the contribution of the course to Education for Sustainability was recognised by the HEEPI Green Gown awards, in which the course was highly commended.

Conclusion

Although the *Language and Ecology* course has only run twice, the initial signs are that an approach to sustainability literacy which includes a focus on the ways that texts construct society, and the consequences for the sustainability of that society, has potential in helping students to become more aware of sustainability issues in their everyday life, and more actively engaged in contributing towards sustainability. The long-term impact of the course on successive groups of students who take it will be monitored carefully and the approach refined in response. Of particular interest is whether the students have developed the theoretical frameworks they started to build, whether they have applied

them in other areas of their study and life, and what practical consequences this has led to.

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