

KONAN UNIVERSITY

Into the Woods : environment and cooperative learning in the literature class

著者 (英)	Anna Ford
journal or publication title	Language and Culture : The Journal of the Institute for Language and Culture
volume	4
page range	18-32
year	2000-03-15
URL	http://doi.org/10.14990/00000332

Into the Woods : environment and cooperative learning in the literature class

Anna FORD

Abstract

This paper examines the premise that the literature classroom can be a stimulating and provocative place to examine the relationship between humans and non-human nature. Further, it can be a place where students begin to observe the world around them, to connect with others, and to question their own assumptions and practices. Rather than focusing on environmental problems and issues as such, the literature classroom examines the basis of such problems in terms of the way in which nature is viewed and represented in culture. Cooperative education is presented as an appropriate means of engaging students in active inquiry into issues involving literature and the environment.

Introduction

To dwellers in a wood almost every species of tree has its voice as well as its feature. At the passing of the breeze the fir-trees sob and moan no less distinctly than they rock ; the holly whistles as it battles with itself ; the ash hisses amid its quiverings ; the beech rustles while its flat boughs rise and fall. And winter, which modifies the note of such trees as shed their leaves, does not destroy its individuality. Thomas Hardy *Under the Greenwood Tree* (8)

“Yet you and he could speak in a tongue that nobody else could know . . . the tongue of the trees and fruits and flowers themselves” Thomas Hardy *The Woodlanders* (331)

As I write, the persimmons in the tree outside the window are ripening and various birds come to visit and taste the reddening fruit. The birds are of various sizes and colorings—Japanese whiteye, wrens and sparrows. The air is loud with them and there is a slight tinge of autumn in the air breaking through a remarkably protracted summer of temperatures in the high eighties and

nineties—signs of global warming? The orange blossoms of the *kinmokusei* are out now so that the air is redolent with a sweetish fragrance. These are signs of the season sometimes lost to city dwellers, even in Japan, which prides itself on its sensitivity to the four seasons; yet not having a persimmon tree nearby, or lacking the time to stop and see what takes place around home, we can become gradually estranged from the natural scheme of things.

In teaching the fiction and poetry of Hardy in the second-language literature classroom, I hope to bring home not only a sense of the meanings contained in his writing, but also to awaken in student readers a new sense of the world around them, inflected by seasonal changes and shaped by the forces of politics operating through class, gender and place. Through Hardy students will come to know what he terms ‘the voices’ or ‘tongues’ of trees. In this class we substitute ‘place’ for the much-used perspective on ‘race’ in order to focus on the environmental dimension of Hardy’s writing: the environment as an important subtext of the work. The study of environment and literature has been widely discussed in the past ten years under the rubric ‘ecocriticism’; however, rather than discussing it more fully here I refer the interested reader to the bibliography at the end of the paper.

Why teach environmentalism in the literature classroom? What are the methods appropriate to such an approach? What does such a focus bring to the selected literary text? What are the possibilities offered by such an approach for teachers and readers? These are some of the questions to be addressed in this paper which examines an appropriate pedagogy, cooperative education, for the study of literature and the environment.

The Study of Environment and Literature

Why study environment and literature together? Setting has always been part of the traditional framework of what is studied in fiction: here it will be emphasized as a significant part not only of the narrative studied, but also of our lives in a particular bioregion at the end of the twentieth century. This approach is justified too by Hardy’s selection of certain novels as being ‘Novels of Character and Environment,’ thus indicating an authorial justification for an ecocritical approach. As described by Grumbling (1996, 151) as “the enduring record of creative imagination,

literature potentially encompasses all subjects of human thought and

experience. A central and recurring theme is the relation between humankind and the earth, with all its living creatures, its habitats, and landscapes. . . .its peculiar value is to personalize the moral and aesthetic issues that inevitably arise in exploring conservation of biodiversity and sustainable development” (151).

Working at the boundaries of two fields, here environment and literature, can provide an enrichment of both : to use a metaphor from ecology, the boundary of two discrete ecosystems creates an ecotone which is richer than either of both alone. Finding in Hardy enactments of characters involved in clearly-delineated environments (or bioregions) with roles determined by age, gender and class can provide a new lens for viewing our own engagement with the world around us. For environmental studies, too often confined to the sciences or oriented to environmental problems or issues, the study of literature can provide a means to examine the conceptual basis of our troubled relations with the nonhuman world. As Karen J. Warren points out, “the connections between the oppression of nature and “Others” (women, people of non-European races, and people of the underclasses) are ultimately “conceptual : they are embedded in a patriarchal conceptual framework and reflect a logic of domination which functions to explain, justify and maintain the subordination of both” (7). An examination of the domination of nature will necessarily entail focusing on those depicted by Hardy as oppressed : the 19th century laborer and the woman.

Education for Sustainability

Educators such as David Orr have stressed the need for environmental studies to address habits of thought rather than merely redressing lack of knowledge.¹⁾ Orr states, “The crisis of sustainability cannot be solved by the same kind of education that helped create the problems” (83). He cites Elie Wiesel’s critique (1990) of the education that produced Auschwitz, designed by what were widely thought to be the best educated people in the world :

It [German education] emphasized theories instead of values, concepts rather than human beings, abstraction rather than consciousness, answers instead of questions, ideology and efficiency rather than conscience (in Orr, 1994, p. 8).

Thus, environmental education must not only engage students in a particular

subject matter, but must also challenge habits of thought, question values and deal with learned passivity.

In reading Hardy we encounter the language of nature, employed not merely to report the external signs of the seasons, or nonhuman life in the woodlands, but to evoke place in a way that searches for the deeper meaning beyond its externalities, in order to express what Hardy terms 'the intentions' found in nature. I won't discuss the relevance of Hardy's writing, both in poetry and fiction, to ecocriticism here, as this question is dealt with more fully in an earlier paper.²⁾

Hardy's vision, largely dependent upon post-Darwinian views of nature, can be examined and deconstructed as expressive of a cultural version of reality that is no longer held today. Darwin's, and subsequently Hardy's, version of a nature wholly held in the grip of a system of internecine competition generated by the forces of natural selection, can be supplemented by an ecological perspective that takes into account the importance of cooperative, as well as competitive, behaviors. Worster's examination of the history of ecology in terms of the socio-historical contexts of each theorist draws attention to the ways in which Darwin, and thus the theory of evolution, were products of a specific world view and a specific society. The literature of the past can thus be used as a way to distance ourselves from contemporary issues and triangulate from a point in a different society and different time.

What should the objectives of environmental education be? How should these be implemented in literature classes?

The Literature Class in the Japanese Setting

Students are largely accustomed to the grammar-translation method, whereby certain students are assigned a portion of the text each week to translate into Japanese. This means that the kind of attention paid to the text is highly intensive so that it is difficult to cover very much material. At the same time, only those students assigned to do the translation work in class are responsible for the reading. Discussion, when it occurs, is largely confined to the text as it has been rendered by the student into Japanese. It is not uncommon to find the English literature class involved in a discussion (by the teacher) of various Chinese characters deemed appropriate for the translation.

For English language teaching, this has a number of consequences. One, the students do not learn a range of skills, such as skimming, scanning, reading for gist and critical thinking, but are accustomed to one reading speed and one

method. Since the object is to turn the text into Japanese, this method also creates a new secondary text in the student's mind which may supplant the English version altogether. Even more critical, there is little attention to the text as a whole in order that larger issues may be raised and discussed by students. With the focus on the sentence level of the text, there is little attention to elements such as characterization, plot and theme and no attempt to engage the student in formulating responses to what they have read. The student may thus have difficulty "in seeing the forest for the trees": that is, exhaustive attention to detail makes it difficult for the reader to perceive the text as a whole. The method also engenders a habit of passivity in the student, who rarely has the opportunity to enter into discussion with fellow readers. The focus of this paper does not permit an extended discussion of these points, but suffice it to say that the continued poor performance of Japanese students on the TOEFL exam relative to other nations of Asia is due in part to the persistence of the grammar-translation method.

In introducing environmental issues to the classroom, the teacher must do more than simply change the object of study. The course must be designed in such a way as to facilitate greater student expression with particular emphasis on discussion and critical thinking. The qualities required for Japanese students as global citizens are outlined by Nakamura, Koji (1997). The same abilities to solve problems, to organise logical solutions, to think critically and to represent themselves adequately apply even more to the student as a citizen striving toward a sustainable future.

The Objectives of Environmental Education

Following David Orr, who stresses the importance of methodological changes as well as the field of study in the curriculum, I feel that the reading class can be a place to transform ways of thinking and deeply-ingrained behaviors. UNESCO characterizes environmental education as being characterised by three types :

- education *in* the environment
- education *about* the environment
- education *for* the environment

Experience in the environment—be it a city street, a farm, a rural village, a beach, a park, or a forest—can be used to give reality, relevance and practical experience to learning. Increased awareness of aspects of the environment can

be expected from any opportunities for direct contact with the environment. Opportunities to learn out-of doors can also be used to develop important skills for data gathering such as observation, sketching, photography, interviewing, and using scientific instruments, and social skills such as group work, cooperation and aesthetic appreciation. Environmental awareness and concern can also be fostered by linking learning to direct experiences in the environment and allowing learners to become captivated by the complexity and wonder of natural systems or immersed in the values conflict over particular environmental issues.

Education about the environment

However, such feelings of concern are not enough if living responsibly and sustainably in the environment is an educational goal. Concern needs to be translated into appropriate behaviour patterns and actions, but for this to happen, it is essential for learners to understand how natural systems work and the impact of human activities upon them. This will include learning about political, economic and socio-cultural factors as well as about the ecological ones that influence decisions about how to most responsibly use the environment. Knowledge about the environment is essential if all citizens are to participate in any informed debate aimed at resolving local, national and global environmental issues. There is much that many non-formal avenues of environmental education, as well as formal curriculum areas, including the arts and the natural and social sciences, can contribute to providing such knowledge.

Education for the environment

Education for the environment aims to promote a willingness and ability to adopt lifestyles that are compatible with the wise use of environmental resources. In so doing, it builds on education in and about the environment to help develop an informed concern and sense of responsibility for the environment through the development of an environmental ethic and the motivation and skills necessary to participate in environmental improvement. (UNESCO, 1980)

As stated above, the aims of a program aimed at environmental awareness should use experiential learning-education in the environment ; provide information about how natural systems work and human impact upon them ; but must also go further to include critical thinking about lifestyles and their impact upon the natural world. UNESCO states,

As decisions regarding the development of society and the lot of

individuals are based upon considerations, usually implicit, concerning what is useful, good, beautiful, and so on, the educated individual should be in a position to ask such questions as: Who took this decision? According to what criteria? With what immediate ends in mind? Have long-term consequences been calculated? In short, he [sic] must know what choices have been made and what value-system determined them (UNESCO, 1980, p. 27).

With the above criteria in mind, we will now examine how the study of a particular novel can meet some of the requirements of educating for sustainability.

Talking About Trees : Hardy's *The Woodlanders*

There are many ways to think about and to categorize trees. We begin with the students' knowledge about trees: their component parts (eliciting vocabulary needed for reading), their role in myth and folktales, and their archetypal significance. We contrast the way trees have been regarded in Japan through Shinto beliefs and practices with European, Christian beliefs. Students thus proceed from solid ground to more difficult areas that benefit from discussion. What are the differences between humans and trees? What are the implications of rootedness versus mobility? In what ways are we similar? When students encounter one character's obsessive delusions about a tree he believes will kill him, these background points are pertinent to the discussion. The novel features two kinds of trees that form the basis of the woodlanders' livelihood: fruit trees and timber. What are the consequences of these linguistic frames, of trees considered primarily as natural resources? Are there any other relevant meanings of trees? What is their significance in scientific terms? What is their significance in ecological terms? What does it mean in the novel when Grace Melbury is unable to identify one kind of apple tree from another? What does Winterborne's ability to plant trees suggest about his character?

Discussion questions thus range back and forth between student perceptions of nonhuman nature and those voiced in *The Woodlanders* by the various characters and by Hardy in his poetry. We become more aware of multiple perspectives and the interests that inform these, in ways that should have resonance beyond the novel studied.

Trees in Groups

In our readings, Hardy writes about the behavior of trees in terms that are readily applicable to society : poems to refer to for such discussions are “The Ivy-Wife”, “Into the Woods” and “Transformation” among others. Descriptive passages throughout the novel also combine naturalistic description combined with interpretation that is characteristically pessimistic about the behavior of trees in groups. See for example :

In the hollow shades of the roof could be seen dangling and etiolated arms of ivy which had crept through the joints of the tiles and were groping in vain for some support, their leaves being dwarfed and sickly for want of sunlight (iv 20).

The points of the ivy leaves “scratch their underlying neighbour restlessly (xii 65).

. . . the creaking sound of two over-crowded branches . . . rubbing each other into wounds (iii 13).

. . . trees close together, wrestling for existence, their branches disfigured with wounds resulting from their mutual rubbings and blows” (xlii 234).

Such a dark view of the natural world is multiply determined : to what extent can Hardy’s view of the forest be attributed to close observations of nature, Darwinist thought and Hardy’s personal situation at the time of writing ?

What is the value of a forest ? What value can it have other than economic or monetary value ? Compare Hardy’s description of the forest at the beginning of *Under a Greenwood Tree* cited above with the views found in *The Woodlanders*.

The Classroom as Ecosystem : The First Law of Ecology

In Barry Commoner’s words, the first law of ecology, and that to be impressed upon the students throughout all the activities in the class, is as follows : “Everything is connected to all other parts of the ecosystem.” The implications of this are important. They reflect the way we structure activities for student interactions, the way we define our subject area, and the way in which we perceive our local part in the global whole. As much as possible, this becomes a way for students with little knowledge of ecology/environmental issues to grasp an essential operation.

The community of characters gathered together as *The Woodlanders* are portrayed foremost as interdependent in ways that enables Hardy to dramatize his understanding of this basic law. Hardy shows the relentless chain of events that are set in motion by the decisions, hesitations, and counter-decisions of each character. The prominent trope of the web described in the novel illustrates a community in which each person has a distinct role to play. Hardy's diary entry of March 4 1886 records his intention for *The Woodlanders* here : "The human race to be shown as one great network or tissue which quivers in every part when one point is shaken, like a spider's web when touched." So too in the classroom must students be encouraged to perceive their part as an important piece of the whole. In past years the seminar group has been plagued with the problem of cliquishness : third year students often do not relate well to their seniors and various discrete small groups exist within the whole.

Cooperative Learning

Appropriate teaching methods can transform a class of discrete individuals with no particular responsibility to other students into a place where students experience interdependence in a positive way. Cooperative education, often used piecemeal by language teachers in such activities as jigsaw learning or talking chips, can be a means of setting up new ways for students to relate to each other in the classroom.³⁾ As opposed to group learning, in which students are temporarily asked to form groups for the purpose of discussion or other activities, cooperative learning seeks to use the group in a way to promote the dependence of learners upon each other to accomplish the given objectives.

To solve the above-mentioned problems of student interactions and to encourage students to participate more actively in class, groups were established from the outset quite arbitrarily. This resulted in a mixture of ages, abilities and social groups within the whole. Students were asked to work as a group on a poster presentation : all members of the group were expected to create a composite poster and to give a short oral presentation on a given topic. We used this opportunity to research certain background areas of the text in detail, forming groups according to each area of focus : science, religion, gender, society and politics in the Victorian context. The research was presented briefly in oral reports related to the poster and submitted in summary form by the group. According to the precepts of cooperative education, each individual received a mark as a group member. The summaries were gathered together in a booklet together with appropriate pictures and distributed to the students.

This activity met the interactional goal of having the groups focus on a common goal and work together, as well as being a means of providing new information both orally and in written form.

In group discussion, there are various ways to ensure that each member gets a turn to talk, and to have each member actively solicited by other members. Activities to foster such behavior are *talking chips*, in which each member must use their chip before another member gets a second turn, or *web-making*, in which a ball of string is passed from one speaker to the other, reflecting the frequency of turns of each member. The goal here is to get away from policing student interactions in order to facilitate their own awareness and responsibilities as part of a group.

Critical Thinking : Beyond the Book

The analysis of the language of advertising, both verbal and pictorial, can further students' understanding of this important rhetorical force. The abilities to first describe and then analyze a picture together with a slogan can help to demystify the process of deconstructing a literary work. Students were given various advertisements from current English language magazines having the common feature of ads that use nature to sell products.

We discussed the various images of nature employed, the kind of consumer targeted, the persuasive language used, and the overall message of the ad. We then evaluated the appropriateness of the images used with regard to the product. Such a non-literary focus can help clarify textual uses of nature, as well as encourage students to become more active interpreters of the language directed at them.

Contact !

The position articulated by Thoreau and reiterated by such ecocritics as Scott Slovic, John Tallmadge or John Elder is the importance of getting out (especially out of the classroom) and renewing one's firsthand sense of nonhuman nature. In a class devoted to the woodlands, the tree in particular and their part in the forest. one must allocate some time to bringing students to a place outside. As Aldo Leopold wrote,

We cannot assume that students bring rich experiences of the outdoors into play when they read. This lack of experience will result in a less

nuanced reading and will ultimately result in apathy toward their physical setting (1941, 256).

Steve van Matre writes that

. . . we have to nourish in others a lasting love for the earth, a joy at being in touch with wild and growing things, a feeling of kinship and reverence. We have to get them [students] out there more often, and help them notice the sky and the trees and the wild things whenever they go (138).

As teachers of literature, we must not allow the nature we emphasize in the classroom to be confined to the pages of a book. Students need the chance to be exposed to whatever is available nearby in the form of urban nature or, if possible, to encounter 'wildness' wherever it can be found. As for activities when there, these can range from the simple hike, a hike with clean-up bags (in which case students make a difference to their environment), nature games or information-gathering excursions.⁴⁾

Teacher as Mentor, as Model

David Orr makes the point very strongly that teachers and administration act as models for beliefs about land use ; attitudes are shown more powerfully than words in the physical layout of the places we call campuses. He writes,

Colleges and universities educate by what they do as well as by what they say. Students no doubt will observe that when the going gets a bit tough, their intellectual mentors and role models regard natural lands and whatever biological diversity they hold as expendable. They will note that those presuming to educate them rarely see any serious educational value in wild lands or even in ancient trees that contain enough genetic information to fill the college library several times over (1994, 66).

At the time of this writing, our classroom is deafened by the 'noises off' of cranes, bulldozers and other powerful construction equipment. The small area of land formerly allocated for student use as a field is being converted to a new interdisciplinary, interfaculty building: a meeting place for the faculties of economics and business administration. Despite the current drop in student enrollment, with sharply accelerating decreases predicted for the future, it has been decided that new buildings will be put in place where students used to run,

play baseball and throw frisbees. A clearer illustration of the priorities of economics over land, and of the power of the administration over the student body, could not be imagined.

Here in Kobe, temporarily, the voices of nature are not silenced, but rendered still more difficult to hear.

A Tentative Conclusion

I notice the behavior of the birds aiming at the persimmon tree, (not mine, but one borrowed from landscape of the next-door garden). They prefer to land first in the bare branches of a nearby cherry tree: first to check the 'lay of the land' before diving in. There too they congregate with others of their kind, or at times, join with as many as two other species at once. They fraternize temporarily with the common goal of feeding, perhaps to exchange interspecies news. Emblems of diversity and cooperation? Perhaps. Even viewed as just birds doing the things birds do to sustain themselves and while away the hours, they bring a certain element of pleasure to my circumstances here; they import a needed wildness that we would do well to ensure habitats and a future for. Bringing the forest to the classroom, here the literature class, can be one way of taking some first steps toward these objectives.

Notes

- 1) David Orr, *Ecological literacy: education and the transition to a postmodern world*. (Albany, State University of New York, 1992)
- 2) Anna Ford, "Scalping, decapitation and deforestation: nature/body politics in Hardy's *The Woodlanders*" Unpublished manuscript presented to ASLE conference in Michigan, June 1999.
See also the paper by Richard Kerridge in the forthcoming work edited by Karla Armbruster. Kerridge argues that whereas many ecocritics focus on nature writing, the novel provides a more complex way to view nature as seen by situated observers.
- 3) For an excellent introduction to this methodology, please see Kagan, *Cooperative learning*. (San Clemente, Ca: Kagan Cooperative Learning, 1992, 1994) There are relevant articles in *JALT Applied Materials* which are well-adapted for the Japanese university setting, and to various kinds of classes.
- 4) There are many excellent sources of information for nature-centered activities in the outdoors: one of the best to begin with is Joseph Cornell's *Sharing the Joy of Nature* (Nevada City, Ca, Dawn Publications, 1998) Another good resource is Steve Van Matre, *Earth education: a new beginning* (Greenville, West Virginia: Institute for Earth Education, 1990)

Bibliography

Ecocriticism

- Allen, Bruce. (1998). *Voices of the earth : stories of people, place and nature*. Tokyo : Shohakusha.
- Bate, Jonathan. (1999). "Culture and environment : from Austen to Hardy" in *New literary history*, 30 : 541-560.
- (1991). *Romantic ecology : Wordsworth and the environmental tradition*. New York : Routledge.
- Branch, Michael et al. (1999) *Reading the earth : new directions in the study of literature and the environment*. Michael P. Branch, Rochelle Johnson, Daniel Patterson and Scott Slovic (eds.) Moscow, Idaho : Idaho U Press.
- Buell, Lawrence. (1995). *The environmental imagination : Thoreau, nature writing and the formation of American culture*. Cambridge : Harvard University Press.
- Elder, John. (1985, 1996). *Imagining the earth : poetry and the vision of nature*. Athens and London : University of Georgia.
- (1985). *Stories in the land : A place-based environmental education anthology* Nature Literacy Series, no. 2
- (1998) *Reading the mountains of home*. Cambridge : Harvard UP.
- Ford, Anna. "Scalping, decapitation and deforestation : nature/body politics in Hardy's *The Woodlanders*" unpublished manuscript, presented at ASLE conference in Michigan, June 1999.
- Gaard, Greta and Patrick Murphy (eds.) (1998). *Ecofeminist literary criticism : theory, interpretation, pedagogy*. University of Illinois Press.
- Glotfelty, Cheryl Burgess and Harold Fromm. (eds.) (1996). *The ecocriticism reader : landmarks in literary ecology*. Athens and London : University of Georgia Press.
- Harrison, Robert Pogue. (1992). *Forests : the shadow of civilization*. Chicago and London : Chicago University Press.
- Kerridge, Richard (ed.) (1997). *Writing the environment* : Zed Press : London.
- (1990) manuscript to be published in forthcoming book Karla Armbruster (ed.)
- Kroeber, Karl. (1994) *Ecological literary criticism : romantic imagining and the biology of mind*. Columbia University Press. New York.
- Meecker, Joseph. (1972) *The comedy of survival : studies in literary ecology*. New York : Scribner's.
- Murphy, Patrick. (1995). *Literature, nature, other : ecofeminist critiques*. Albany, N. Y : State University of New York University Press.
- Spirn, Anne Whiston. (1998). *The language of landscape*. New Haven and London : Yale University Press.
- Warren, Karen J. "Feminism and Ecology : Making Connections." *Environmental Ethics* 9. 1 (Spring 1987) : 3-44.
- Worster, Donald. (1977, 1994) *Nature's economy : a history of ecological ideas*. Cambridge : Cambridge University Press.

Environmental Education

- Bowers, C. A. (1995). *Educating for an ecologically sustainable culture : rethinking moral*

- education, creativity, intelligence, and other modern orthodoxies.* Albany : State University of New York Press.
- Collet, Jonathan and Stephen Karakashian. (1996). *Greening the college curriculum : a guide to environmental teaching in the liberal arts.* Washington : Island Press.
- Elder, J. (1985). *Stories in the land : a place-based environmental education anthology.* The Orion Society
- Grumbling, V. O. (1996) "Literature" in *Greening the college curriculum : a guide to environmental teaching in the liberal arts.* Washington : Island Press. (151-173)
- McDowell, M. (1998). "Talking about trees in Stumptown : pedagogical problems in teaching eco-comp" in *Reading the earth : new directions in the study of literature and the environment* Michael P. Branch, Rochelle Johnson, Daniel Patterson and Scott Slovic (eds.) Moscow, Idaho : Idaho U Press.
- Nakamura, Koji. (1988). "A Cross-Cultural Syllabus for EFL College Students : Developing Cross-Cultural Communicative Competence at the Tertiary Level." *Gengo to Bunka : The Journal of the Institute for Language and Culture, Konan University.* 2, 1-23.
- Orr, D. W. (1992). *Ecological literacy : education and the transition to a postmodern world.* Albany : State University of New York.
- (1994). *Earth in mind : on education, environment and the human prospect.* Washington, D. C. : Island Press.
- (1996) "Reinventing higher education" in *Greening the college curriculum : a guide to environmental teaching in the liberal arts.* Washington : Island Press.
- Reardon, Betty and Eva Nordlund (eds.) (1994). *Learning peace : the promise of ecological and cooperative education.* Albany : State University of New York.
- Suzuki, David and Amanda McConnell. *The Sacred Balance : Rediscovering Our Place in Nature.* Vancouver, B. C. : GreyStoneBooks, 1997.
- Tallmadge, John (1997). *Meeting the tree of life : a teacher's path.* Salt Lake City : Utah University Press.
- Van Matre, Steve. (1990). *Earth education : a new beginning.* Greenville, West Virginia : Institute for Earth Education.

Cooperative Education

- Johnson, D. W. and R. T. Johnson and E. J. Holubec. (1994). *Cooperative learning in the classroom.* Alexandria : Association for Supervision and Curriculum.
- Kessler, C. (ed.) (1992). *Cooperative language learning : a teacher's resource book.* Englewood Cliffs, N. J. : Prentice Hall Regents.
- Kluge, D., S. McGuire, D. Johnson and R. Johnson (eds.) (1999). *Cooperative learning.* Jalt applied materials Tokyo, Japan : JALT.
- Slavin, R. E. (1995, 1990). *Cooperative learning : theory, research and practice.* Boston and London : Allyn and Bacon.
- Thornton, P. (1999). "Reading together" in *Cooperative learning.* D. Kluge, S. McGuire, D. Johnson and R. Johnson (eds.) Jalt Applied Materials. Tokyo : JALT.

Appendix

These picture books encapsulate many approaches to the forest : scientific, mythic, humourous,

highly colorful and even tactile perspectives on the subject. They can be used quickly and efficiently to provide a range of views of nature as it is introduced to children.

Children's Books about Trees, the Forest

Brenner, Barbara and May Garelick. (1979) *The tremendous tree book*. Fred Brenner, illus. New York : Four Winds Press.

Outstanding illustrations, striking and simple, with fittingly simple language.

Dickinson, Jane. (1983) *All about trees*. New Jersey : Troll associates.

Uses format of questions and answers to cover the parts, uses and life of a tree.

Giono, Jean. (1954, 1985) *The man who planted trees*. Michael McCurdy, illus. Vermont : Chelsea Green Publishing.

A fable about a man who took a desert area of the south of France and made it his life work to revitalize it with trees. Outstanding woodcut illustrations.

Jaspersohn, William. (1980) *How the forest grew*. Chuck Eckart, illus. New York : Mulberry Press.

An environmental classic, simple and easy to read on the subject of forest succession.

Kalman, Bobbie and Janine Schaub. (1992) *How Trees Help Me*. New York : Crabtree Publishing. An ecology primer centred on the tree with supplementary activities.

Markle, Sandra. (1993) *Outside and inside trees*. New York : Bradbury Press.

Photographs and microscopic photos of a tree to give a new perspective to children.

Scholastic Voyages of Discovery : (1993) *Trees and Forests*. (originally published in France by ed. Gallimard under the title, Des forets and des arbres) New York : Scholastic Books.

A superlative text with photographs and transparent overlays to convey the texture, size, shapes and life of trees.

Seuss, Dr. (Theodore Geisel) (1971) *The Lorax*. New York : Random House.

An ecological fable about what happens to animals when trees are cut down. Recounted by the lorax, a spirit that resides within the tuffula tree. Delightfully colorful and imaginative drawings.

Silver, Donald. M. (1995). *One small square : woods*. Patricia J. Wynne, illus. New York : Learning Triangle Press.

Beautifully illustrated account of woods as habitat with activities for students.

Silverstein, Shel. (1964) *The giving tree*. New York : Harpers and Row.

A parable about giving and accepting in return, using the tree and the lifespan of a person as an example.

Tresselt, Alvin. (1972). *The gift of the tree*. Henri Sorensen, illus. New York : Lothrop, Lee and Shepard Books.

A dramatization of the role plants and animals play in the succession of a forest.