Ecology Art Education On-Line: A World Community of Old Trees

A Story of the Research

June Julian, Ed.D.

Dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education in the
Program in Art Education
Department of Art and Arts Professions
School of Education
New York University
1997

Sponsoring Committee: Professor David W. Ecker, Chairperson
Professor John Gilbert
Professor Millard Clements

Ecology Art Education On-Line: A World Community of Old Trees

June Julian, Ed.D.

Abstract

A World Community of Old Trees, http://www.nyu.edu/projects/julian/, is the Internet research component of the doctoral dissertation, *Ecology Art Education On-Line: A World Community of Old Trees*. It is the first study in the discipline of Art Education to use the World Wide Web to transmit and receive data for doctoral research. First launched on the Web in 1991, it continues to serve as an open digital space to receive the input of hundreds of tree enthusiasts from all over the world. To date, the three major sections of the project, TREE GALLERY, TREE MUSEUM, and TREE TALK, include well over 100 separate Web pages with contributions of text, imagery, and digital multimedia from persons of all ages, from 21 states and 18 countries. The research objective was to examine the potential of the World Wide Web as a medium of communication and exchange for ecology art education.

Art Education On-Line: A World Community of Old Trees

A Story of the Research

Introduction

When I first saw the walls of doctoral dissertations converging toward distant vanishing points at my university's library, I sensed that those volumes contain not only words but also, somehow, peoples' lives. Likewise, my study is based on lifetime concerns, a passionate love of nature and long involvement with ecology issues both in my own painting, and in teaching art to young people.

Diverse wilderness experiences have taught me the aesthetics of nature firsthand. My fascination with trees comes from having lived in places that had hardly any at all. When I lived in those places, I yearned deeply for the Northeastern hardwood forests of home. Often using the National Register of Big Trees as my guide, for the past seven years I have been seriously making paintings about the oldest trees that I can find near my home and in my travels.

This study is a result, too, of over a decade of work on ecology themes with my middle and high school art students. Because I have been lucky enough to share their concern and efforts, my struggles in ecology art education are very real, inspired both by nature, and by actual human faces.

Hyperlinks on Paper

When I wrote the final draft in 1996, electronic formats for doctoral dissertations did not yet exist. How could I communicate the dynamic nature of a Web study in a paper dissertation? Of course I could never duplicate a live Web site that way, but I tried to suggest the feeling of one by employing several devices in the conventional document. In it, I underlined all the text that operated as hyperlinks in the Web project, and I encouraged readers to navigate their own paths through the print, just as they would do on the Web site. I embedded e-mail within the text and used actual Web pages for illustrations. In its rag and pulp format, the last time I checked, my dissertation sits still as a sphinx on the hard shelf at Bobst Library. As bits and bytes on the Web, it thrives and

grows daily. Only when professional journals in art education become digital can Web-based research be authentically presented.

Three Main Definitions

What is meant in this study by the term, *ecology*? What is meant here by *ecology art*? and *What is ecology art education on-line*? In the largest sense, ecology is the study of the interrelationship of living organisms within a shared environment or community. With telecommunications, community members no longer need to share the same physical space. In fact, they may be dissimilar individuals in every way except for the common focus that they share. This description of community works for various species trying to survive in the forest, or for children from different cultures working together on the World Wide Web on an ecology art project.

Ecology artists are sensitive to the interconnectedness of all living things and seek to create form around this concept. It's true that from prehistory to the present, human beings have been trying to make sense of their relationship to nature through their art. What has changed though is a new attitude toward nature. Rather than the old "dominion over" idea, the new ecology model stresses interdependence with nature. Ecology art, by extension, is based on these principles.

Ecology art education on-line is a way of empowering persons to act on their ecology concerns by sharing art on the Internet. Through the tremendous power of the network, a single ecology art project can extend beyond the self, beyond a single culture, exponentially, through the computer. This on-line community of learners is an ecosystem, too, one that depends on interpersonal relationships, and interaction with each other, the subject matter, and the medium to exist and to grow.

Is there a difference between environmental education and ecology education? Environmentalism can refer to the preservation and conservation of nature for human benefit. It is commonly known that ecology is the study of the interdependence of all organisms, with no one species having priority in the web of life. Education about each

category naturally reflects the philosophy that is inherent in each one. Although the subject of old trees was used as the theme of this research project, any ecology subject matter that is interesting to the students would be appropriate to use for ecology art education on-line.

The Problem: Examining Web Potential

In this study, my purpose was to conduct an ecology art project on the Internet, utilizing the World Wide Web as the medium for communication and exchange, in order to examine its potential for ecology art education. Here are some of the questions that needed to be addressed at the start:

1. What is the status of on-line use for ecology art education? How will data on past and present ecology art projects on the Internet be collected and examined?
2. How will the new ecology art project on the Internet be implemented on the World Wide Web to optimize a global community of learners engaged in an open system of art production, dialogue, and criticism?

What will be the technological considerations of the project design?

3. How will the researcher evaluate the potential of the World Wide Web for ecology art education?

Need for the Study

From my point of view as an artist and veteran art teacher of students in grades 7-12, the need for the study cries out from our shared concern for our beautiful planet. What can we do to give form to this concern, get information, and take action? The works of ecology artists show us that it is possible to create form on the concept of the interconnectedness. The emerging issues of ecology education and telecommunications in the schools can be integrated into art education to create avenues of information and action for students.

Based on my observation of students who zealously join environmental clubs at school, create compassionate art works about the earth, and network with each other at conferences and on hundreds of listservs, news groups, and Web sites on the Internet,

there is a huge need for ecology art education in the school. This necessity is demonstrated by students themselves. It transcends changing state and federal environmental education agendas and seems to remain constant in spite of them. Art students want information and they want to become involved. This study is for them. But why are telecommunications necessary in ecology art education? Millard Clements, professor of Environmental Conservation Education at New York University, encourages young ecologists to use the same technologies as the polluters. In no other way can important, timely information from a spectrum of ecology sources be made available nearly instantaneously. With every school in the country being connected to the Internet by the year 2000, there is an obvious need to address its impact on art education. For these reasons, this study is necessary in my academic discipline to investigate the capabilities of the Internet and World Wide Web for ecology art education, and to demonstrate the viability of research projects in art education on the Web.

Some Resources From the Internet and From the Literature

During the course of my research, the fabulous mega site, *Art & Ecology*, did not as yet exist on *ArtsEdNet*. I was able to make use of the *ArtsEdNet* e-mail listserv, though, to post numerous calls for participation later when the Web project was launched. *EMIG*, the Electronic Media Interest Group, an affiliate of the National Art Education Association, proved to be a very rich and supportive resource for *A World Community of Old Trees* by its putting one of the first links to the tree project on its Web site, and by acting as a consistently strong agent for its promotion. Another early supporter of the project was the *Art Teacher Connection*.

Since electronic resources in art education were just developing at that time, I initially relied on the familiarity I had with Internet resources in environmental education. My involvement with telecommunications through my course work in Environmental Conservation Education, and *the Navigating Global Cultures* Distance Learning project at New York University had provided me with a good working knowledge of the Internet resources in environmental education. This background prepared me to see the need in my own discipline.

The following listservs formed the backbone of my electronic communication with teachers throughout the world: *Kidsphere, EdNet, IECC* (Intercultural E-mail Classroom Connection), *EarthDay Online*, *EnviroLink, EcoNet, The Art Teacher Connection, EMIG, and ArtsEdNet.*

Numerous sources in ecology, philosophy, education and the visual arts literature have informed this research over the years. By defining *Art as an Open Concept*, Morris Weitz showed that Art can easily integrate ecological issues and telecommunications. (Weitz, 1962) Within his environmental aesthetics, Arnold Berleant declares that "The perceiver is an aspect of the perceived; person and environment are continuous."(Berleant, 1992) This sounds like a good idea in theory, but how can this perceptual shift be accomplished, especially with school age children? Here is where Berleant's theory of environmental aesthetics is so powerful and why it works so beautifully for *A World Community of Old Trees*. What he calls for is intense engagement with nature that actively employs all of our senses. For the viewer to become continuous with the environment, he asks for a passionate total sensory immersion in it. Yet, according to Berleant, this is not enough. The integrated self, not only the senses alone, must become activated in the aesthetic perception of environment.

For ecology art education, the entire student, complete with personal, cultural, and social history, must be engaged in this experience. The simple act of perceiving a tree, then, is not so simple then. For students participating in ecology art education, they are asked to confront that tree, or any other aspect of the physical world, with their total selves, completely. Then, they may give form to that complete engagement, with art media, and with language.

Most environmental historians recognize Aldo Leopold as the originator of modern ecology theory. (Bramwell, 1989) In his *Land Ethic*, he replaces conventional anthropocentric environmentalism for biocentric ecology. (Leopold, 1949) The work of both Berleant and Leopold form the philosophical bases for *A World Community of Old Trees.*

The insights of William Doll in *A Post-Modern Perspective on Curriculum* are particularly appropriate for an ecology art education on-line since he argues for a *dialogic*

rather than a didactic method. "An open, interactive, communal conversation is key to a post-modern curriculum." (Doll, 1993)

I used David W. Ecker's *Matrix of Generic Questions for Curriculum Research and Development* (Ecker, 1992) to examine past, present, and future projects, and combined it with Ecker and Kaelin's *Levels of Discourse in Aesthetic Inquiry* (Ecker & Kaelin, 1972) to situate criticism, meta-criticism, and theory successively in each of the research questions.

Suzi Gablik's *The Re-Enchantment of Art* is a valuable resource for establishing the tradition of ecology art. She calls for an art of involvement and empathy, and observes how art has progressed from *ego-centric* to *socio-centric to eco-centric*. (Gablik, 1991) These are critical thoughts for me because they establish artists as being able to accommodate emergent social issues, in this case, ecology-based art education in their work. Because of Gablik, I am able to perceive *A World Community of Old Trees* as a collaborative art piece. For the initiation of the on-line project, resource material on old and big trees is useful.

For all U.S. participants, the 1998 edition of *The National Register of Big Trees*, published by American Forests is available in print and on their Web site. (American Forests, 1998) Also, various state guides are readily available.

Navigating with Ecker's Method

This project is its own little ecosystem, and, as part of a larger ecology it is, of course, connected to events and information that are enormous in scope. The decisions that I have made to limit this inquiry were based on my perception of the requirements of its design. Controversies surrounding the use of the Internet in the schools and the shifting winds of environmental politics are not included in this study. It is not a history of art and nature, nor of environmental nor ecology art, nor is it my purpose to make aesthetic judgments about the art work submitted to the project. Also, my purpose is neither to examine problems in global tree ecology nor to suggest solutions to them. Rather, the project provides a framework for participants to have a relationship with trees, and through an interactive digital context, also with each other.

With all of this in mind, I have fused the Aesthetic Inquiry methodology of David Ecker and Eugene Kaelin, with Ecker's *Matrix of Generic Questions for Curriculum Research & Development*. Ecker's method was used as the phenomenological navigating tool for the study with its three distinct phases:

1. What was the case and What is the case?
2. What could be the case?
3. What should be the case?

(Ecker, 1992)

At each of the three phases I employed one of the three successive levels of discourse, criticism, meta-criticism, and theory, as outlined in Figure 1, Ecker and Kaelin's *Levels of Discourse in Aesthetic Inquiry model,* http://www.nyu.edu/projects/julian/ladder.html. Their famous ladder diagram represents how *knowledge claims concerning the existence or interpretation of aesthetic objects derive from the art object*, and that *each higher level of discourse has as its object of reference either one or more, perhaps all, of the strata located beneath it.* (Ecker and Kaelin, 1972)

For example, for the first phase of this research, the Internet ecology art project survey, the method was operative at the critical level, where computer data on past and present ecology art projects was collected from sources on the Internet to determine the history and status of similar projects.

For the new Internet ecology art project in phase two, *A World Community of Old Trees*, the method of research operated at the meta-critical level, addressing the findings of phase one and launching a new internet ecology art project on the World Wide Web. The new project was, in fact, the meta critique in process.

Finally, at the third phase, the research method was positioned at the theoretical level, to examine the completed project and made recommendations for ecology art education on-line.

Figure *2 The Big Picture*, http://www.nyu.edu/projects/julian/big_picture.html, gives form to my thinking about the study. The heartwood from which the other rings radiate, is my paintings of old trees. Each successive ring encompasses a wider frame of

reference, until the total is wrapped by the ecology philosophy of Aldo Leopold as the final ring.

With Figure 3 *A Closer Look*, http://www.nyu.edu/projects/julian/closer_look.html, I try to structure my thinking about *A World Community of Old Trees* by applying a new radiating configuration to Ecker and Kaelin's Levels of Discourse ladder.

Internet Ecology Art Project Survey

How was data on past and present Ecology Art Projects on the Internet collected and examined? What was the case and What is the case?

In this initial phase of the research first begun in 1994, I hoped to establish the history and current status of ecology art education on the Internet. Two questions are presented in one category because the method that was used for both was the same, phenomenological description of the data gleaned from: *IECC, ArtsEdNet, EnviroLink, EdNet* and *EcoNet*. Beginning with a posting on *IECC* Projects in September 1994, data was collected through e-mail queries on educational listservs over a period of two years. the findings were then indexed according to: contact teacher's subject area, art teacher participation, location of school, topic of project, grade level, length of project, procedure for participation, and format for disseminating imagery. Working at the critical level, I used phenomenological description to record my findings.

What was the case?

Robert Fromme's e-mail correspondence to me about *Project Ecology* documents the early beginnings of ecology art projects on-line, and provides the most valuable historical perspective to this study. (Julian, 1997)

His 1993 article in *Interpersonal Computing Technology: An Electronic Journal for the 21st Century* describes how he and his students participated in this pioneering e-mail project. *This super project was the brain-child of four high school teachers, Tadeo Kawasaki and Mitsuru Takahashi of Katsuta, Japan, and middle school teachers, Sheldon Smith and Mike Lang of Atascadero, California*. (Fromme, 1993)

At that time, through the *IECC* listserv, I had received e-mail notice of two other early on-line ecology projects. Although they did not specifically involve art, they demonstrated the tremendous possibilities for classroom collaborations on the Internet. Also, Texas art teacher, Lyn Belisle, conducted an exchange, *The Green Dream Machine: Art, Ecology, and the Internet,* that took place during the 1994-1995 school year. (Julian, 1997)

Based on my research of Internet resources that had no subscription fee, there were only four projects through the 1995 academic year that could qualify as specifically addressing ecology issues with on-line art: *Project Ecology* 1993*, Project Ecology* 1994*, Project Ecology* 1995*, and The Green Dream Machine: Art, Ecology, and the Internet* 1994 - 1995. They all used e-mail to promote their projects, and the finished art work was sent via snail mail to a final exhibition.

What is the case?

While researching the current practice of ecology art education projects on the Internet in July 1996, I found an announcement that mentioned that the Fourth Edition of *Project Ecology* would utilize the Web. No Web site for the project was linked from the referring page, nor could I locate one by conducting a Web search. However, at the time of this writing, I did locate the *Project Ecology* Art Exchange Gallery for 1997 on the Atascadero Junior High School Home page authored by Sheldon Smith. The complete history of Project Ecology is well documented on that site. I also found notice from Robert Fromme on *ArtsEdNet* announcing the fourth project for March 19-April 21, 1997. My study, completed in 1996, documents that *Project Ecology* was held in 1994, 1995, and 1996. (Julian, 1997)

For finding more information on the current status I set a two hour time framework for searching the key words: *ecology art,* and *ecology art projects,* on the Web. The first link that appeared in the list was *Art and Ecology: Interdisciplinary Approaches to the Curriculum*, http://web.cgrg.ohiostate.edu/COTA/arts_advocate/spring96/art_ecology.html. This site was for the National Colloquium for Teaching Contemporary Art at Ohio State

University, held on June 28 to July 2, 1996. Returning to EnviroLi*nk, EcoNet,* and *IECC* brought only notices about *A World Community of Old Trees*. Then I opened the *ArtsEdNe*t Web page. *ArtsEdNet* is the Getty Center's online service for K-12 art education. There were no Internet ecology art projects listed in any of them.
From what I could determine from a timed Web search, and accessing known ecology, education project, and Art Education Web sites, *Project Ecology* was the only case that represented the current practice in July 1996, other than my own.

What could be the case?

The phenomenological descriptions above of What was the case? and What is the case? for ecology art education on the Internet is a critique of past and present practice up to July 1996. As criticism, it is positioned at the second level of discourse on Ecker and Kaelin's *ladder* model. (Ecker and Kaelin). The new ecology art project on the World Wide Web*, A World Community of Old Trees*, functions as a meta critique of those projects, occupying step two on the ladder.
In examining the early projects, I noticed that they might be further expanded in six categories:
Participation
Interaction,
Content
Promotion
Information Collection and Distribution
Evaluation.
The dynamic and graphic nature of the World Wide Web made it possible to answer *What could be the case?* with a new project.

A Case of Wide Open Participation

Early projects limited participation to a student population only. The tree project opened the project to a global community of learners of all ages. Students, artists, art teachers, and interested persons all over the world were invited to participate.

A Case of Dynamic Interaction

Because the Web allows projects to unfold in real time, it encourages interactive rather than static participation. After a basic structure for the project was put in place, each participant's contribution was added as it came in. Visitors could interact with the site by adding photos, text, Web links, art work, tree ecology facts, print sources, comments, etc. to an ever-expanding project. Also, my student, Josh, requested interactions to be in the form of more art, through manipulations of his tree imagery on the site.

A Case for Open Content

In reviewing the subject matter of past and present eco-art projects on-line, I realized that the previous content might be expanded with open participation. The design of *A World Community of Old Trees* allowed the theme to be openly determined by participant interpretation and interaction. It also provided the participants with a multi-layered format. Within the new project there were three main sections that were available for participant interpretation and input:

1. The Tree Gallery
2. The Tree Museum
3. Tree Talk.

These three components functioned as flexible armatures on which contributors could freely hang their ideas. The Tree Gallery , with its three sub-sections, Artists' Trees, Student Projects, and Add-Your-Own, was a digital exhibition space for tree imagery. Persons of all ages could send in their art work, or a link to their tree art Web site. There was a special project component in place within the Tree Gallery for students in grades K-12 and their art teachers. In the Student Projects section, students sent in their art work

and accompanying descriptive text. The Add-Your-Own section included detailed instructions for both adult and student participation in the Tree Gallery.

The Tree Museum held two sections within it: Web Sources, and Print Sources. Web Sources is open for the contribution of URL's (Web links) that contain information or imagery on the world's oldest trees. Bibliographic references from standard print media that are sent in are compiled in the section, Print Sources.

Tree Talk provides a space for participants to share ecological information on old trees by by sending in external Web links or e-mail postings. They may also send in photos and text. Embedded in the Tree Talk section is Commentree, the dialogue space for project participants and visitors. The entries in this section are arranged chronologically. The three main sections as outlined above, provided a basic armature, but because of the open concept of the project as a whole, and also each section and subsection, serendipitous events were welcomed and enjoyed.

A Case of Promotion, Promotion, Promotion

Previous projects relied solely on Internet postings and a static textual notice on the Web page of an educational on-line service. The publicizing attempts and the building of A World Community of Old Trees, grew organically and simultaneously. In a way, the developing Web site, open to public view, was its own best advertisement.

My first task was to create a Web page and to install it on a server. I used only one resource, *A Beginner's Guide to HTML*, freely available at that time on Netscape 1.0. Although software programs for creating Web pages were just starting to come out at that time, I never needed to use them. In fact, I used only a handful of basic HTML commands to create and maintain the Web site, and still do. To constantly reinforce its presence, I used personal e-mail, listservs, and newsgroups, and filled out Mail-To forms on related Web sites.

A Case of Electronic Data Collection and Distribution

A World Community of Old Trees expanded the way information was collected and distributed by offering the option of sending picture and text files electronically. Earlier

Internet ecology art projects relied solely on snail mail to collect information. Also this research project distributed all of the information as it came in directly onto the World Wide Web. This was a big departure from the early ecology art projects that distributed text and pictures via snail mail to be exhibited at individual participating schools at the close of the project.

Another interesting feature is that it is possible to put material on the site and then immediately e-mail the contributors to inform them of their URL.

A Case of On-Line Evaluation

Former Internet ecology art projects were evaluated by the adult project initiators, and by participating students at the end of the project by compiling a list of comments. *A World Community of Old Trees* expanded this method of evaluation by having on-line forms directly on the Web site. Project visitors and participants could critique the project in progress by sending in e-mail comments on a Mail-To form at the bottom of each Web page or by filling out a Survey Form or Comment Form in the Commentree section.

All Contributions as Data

The initial Web site included the Main Page, the Project Instructions , the School Permission Form and the Parent Permission Form. Additionally, I created several demonstration pages within the Tree Gallery, the Tree Museum, and Tree Talk components.

When I turned in the finished dissertation to the School of Education at New York University on January 31, 1997, the Web project's Table of Contents listed contributions of photos, art work, a song, a video, tree facts, personal narratives, poems and stories from adults and children from around the world on over 100 separate Web pages.

In the Table of Contents, the Tree Gallery featured all of the student and adult artists as internal and external links. The Tree Museum's two sections, Web Sources and Print sources, each contained a lengthy list of citations referring to old trees submitted from participants around the world. The Tree Talk component at that time had 20 global contributions from persons sending in photos or text about the most extraordinary trees in

their world. Now two and one half years old, A World Community of Old Trees is still growing with participation from over 24 states and 18 foreign countries. Please join us!

What Should Be the Case?

This study was initiated with the objective of examining the potential of the World Wide Web as a medium for communication and exchange for an ecology art project. How naive to think that I could assess the potential of an entity so vast and so synergistic! I may as well have set out to examine the potential of the human spirit itself, for that, of course, is what propels the Web. With regard to the Web's potential as applied to this ecology art project, I was able to make some observations, and I will share them here. The overall potential of the Web for ecology art education was assessed by examining the material that came into the six meta critical points built into the project: 1. interaction, 2.participation, 3. content, 4. promotion, 5. information collection and distribution, and 6. evaluation. Based on my research, here are my recommendations in each of those categories for What should be the case?, for ecology art education on-line.

To Encourage Interactivity

Probably the most compelling aspect of the World Wide Web and the one that will invite the most research in the future, is its natural potential for interactivity. In ecology art education, interactivity is essential, because it is the basic premise for ecology itself. In *A World Community of Old Trees* comments were sent directly on Fill-Out and Mail-to Web forms, participants could interact with imagery already on the site by sending in graphics files in response to it, or by computer manipulation of existing project art. Because of constraints on this research by New York University's Committee on Activities Involving Human Subjects for research with minors, methods for optimizing participant interaction, such as the use of a Web Board, were not available for use in this research. Participants were unable to communicate directly with each other. Further research, conducted outside of University constraints, is needed on participant interaction within a Web ecology art project.

What all of this suggests to me for future research is the identifying and isolating of interactivity factors on a Web ecology art project in order to examine their particular characteristics and to make recommendations to classroom art teachers about the nature of specific ones.

To Encourage Participation

In sharing my tree paintings in the digital format of the Web and by extending an open invitation for others to join me, my work became *decentered*, within a new communal context. As the project developed, I began to see the human spirit shine through the Web, and began to really appreciate its potential to carry that spirit.

Yet, to optimize participation, various features of Web project design should be considered. Having text-based sections in addition to ones requesting visual collaborations was a good way to encourage participation from non-artists and to enrich the community. By making participation in an ecology art project an open rather than restricted category, *A World Community of Old Trees* was able to demonstrate the potential of the Web for engaging a large and diverse group in a relationship. However, any project will sit silently on a server unless deliberate thoughtful strategies for project promotion are initiated and repeated. Additional research should address these issues.

To Maximize Open Content

To maximize the potential for the open interpretation of thematic content, it is necessary from the start to encourage inclusive and flexible thinking about the project's conceptual basis. One way that worked was to embed several varied demo pages initially on the site. I began my project with scanned paintings of trees, computer graphic tree images, text about trees, including participatory annotated bibliography and URL lists, a multimedia video demo, and outside links to old tree sites. This seemed enough to prime the pump for many spirited contributions in diverse modes from artists and non artists from around the world. Because there was no prevailing meta narrative, encouraging open interpretation of subject matter brought unexpected results. For example, I received a very old family tree, a tree poem and image made with number symbols, and an

embedded project about the proposed exchange of actual soil & seedlings from every state in the union, among others.

To Maximize Promotion

A Web site developing over time and open to public view as it does so, is its own best advertisement, if only people would know about it. In addition to constantly publicizing the project during the course of the year through repeated e-mail postings on subject matter related listservs, I was continually surfing all of the art education, environmental education, ecology, and old tree Web sites that I could find, sending e-mail to the ones I considered most appropriate and requesting a complementary link. In reviewing the statistics for this Web project for the total transfers from each archive section, the most "hits" came from the pages that were linked externally, not necessarily the main page. External links to the project should be actively solicited. A Web project should invite collaboration in various media, and be promoted both as a whole and separately for each medium. Additionally, external links from the project should be regularly maintained. They should be periodically reviewed to see if they still exist and continue to be appropriate. In *A World Community of Old Trees* several links had evolved away from the project's focus and had to be removed.

To Manage Information Collection and Distribution

The practice of collecting information directly from the Internet and of building the site as soon as the electronic submissions came in was very effective, People could see their material right away, and prospective participants could view existing entries. This way, the idea of a final exhibition at the end of the project, becomes obsolete. With this study, there is no finality, yet. It has a life of its own and continues to grow and to gather data. I feel lucky that when I began the tree project, Web development was in its infancy, and all of my experiences of creating and maintaining the site were very definitely "hands-on", very much like making a painting. As the software has become more sophisticated, the process has become less direct but more elegant. Future researchers will be challenged to stay current with the rapidly developing technologies and to publish their time-sensitive

material quickly. Eventually, *A World Community of Old Trees* may be archived at the university in its original form, to match the paper document on the library shelf. Then I feel I could renovate the original site and incorporate the new software that has been developed since the project was first launched. What implications this has for future research is unknown.

To Develop Methods of Assessment

The design of assessment for on-line ecology art education projects should refer back to the project's initial educational philosophy and objectives. Since I adopted William Doll's postmodern framework for *A World Community of Old Trees*, I was interested in the project as an open system in progress. Because of the dynamic nature of the Web, the tree project was able to accommodate open participation, open content, interactivity, on-line information collection and distribution and evaluation, beautifully. Rosemary, a thirteen year old student from Australia, was able to benefit from adult response to her research on the Wollemi Pine, which was placed directly on her page. In addition to separate Fill-Out Assessment forms, such as the Comment Form and the Survey Form , I found that analog means of assessment should not be overlooked. Also, I found that my own Self Evaluation of the project based on those six points embedded within the research objective to be a valuable exercise. (Julian, 1997) Each collaborative project is its own community and assessment should derive from open conversation within that community. It can embrace clear criteria, goals and standards, but its form may and should be as much open to possibility as the project itself.

Postscript

What began as conventional oil paintings on a wall, has in the course of this study, become a collaborative ecology art piece with global involvement. In the course of this study, I have spent hundreds of hours on the Internet, connected to persons of all ages, all over the world, witnessing levels of enthusiasm and intense commitment that renew my hope for our collective well-being. The World Wide Web gives us a wonderful way to celebrate each other and our world.

REFERENCES

Berleant, Arnold. (1992). The aesthetics of environment. Philadelphia: Temple University Press.

Bramwell, Anna. (1989). Ecology in the 20th century. New Haven: Yale University Press.

Doll, William B. (1993). A postmodern perspective on curriculum. New York: Teachers College Press.

Ecker, David W. (1992). Projects for collaborative research and development in arts education. Paper prepared for The Third Annual South Carolina Higher Education Forum, University of South Carolina, Columbia, South Carolina.

Ecker, David W., & Kaelin, Eugene. (1972). The limits of aesthetic inquiry: a guide to educational research. In Philosophic redirection of educational research.

Fromme, Robert. (1993). Project ecology: an international exchange of student art. Interpersonal Computing and Technology: An Electronic Journal for the 21st Century. [On-line], Available: ftp://ftp.lib.ncsu.edu/pub/stacks/ipct/ipct-v1n04-fromme-project.

Gablik, Suzi. (1991). The reenchantment of art. New York: Thames and Hudson.

Julian, June. (1997). Art education on-line: A world community of old trees (Doctoral dissertation, New York University, 1997). Ann Arbor: UMI, 1997.

Julian, June. A world community of old trees. http://www.nyu.edu/projects/julian/

Leopold, Aldo. (1949). Sand county almanac. New York: Oxford University Press.

National register of big trees 1998-99. American Forests. 104. 11-49.

Weitz, Morris. (1962). The role of theory in aesthetics. In Joseph Margolis (Ed.) Philosophy looks at the arts, Contemporary readings in aesthetics. New York: Charles Scribner's Sons.