

Ecomedia Literacy Bringing Ecomedia Studies into the Classroom

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ECOMEDIA LITERACY

Bringing Ecomedia Studies into the Classroom

Antonio López

For scholars and educators wanting to incorporate ecomedia into their instruction, this chapter introduces ecomedia literacy and offers a brief overview of analytical methods that can be used for teaching. Ecomedia literacy combines ecomedia studies scholarship explored in this book with the tools of critical digital and media literacy. At its core, literacy

involves gaining the skills and knowledge to read and interpret texts of the world and to successfully navigate and negotiate its challenges, conflicts, and crises. Literacy is thus a necessary condition to equip people to participate in the local, national, and global economy, culture, and polity.

(Kellner and Share 2019, 3)

Media literacy “has always been about demystifying the structures of media, information, and communications technologies and preparing students to identify how and why media are constructed, along with implications and effects related to social, economic, and political power” (López, Share, and Redmond 2022, 467). Ecomedia literacy expands this by prompting learners to make sense of how ecomedia infrastructures and our engagement with them connect with ecojustice for the present and future. Ecomedia literacy aims to foster a transformative shift in cultural behaviors, attitudes, and media practices by promoting eco-ethical norms and eco-citizenship. (López 2021).

Like legacy scholarly traditions associated with media studies, historically the field of media literacy has not addressed environmental concerns (López 2014). However, there are some examples of environmentally themed media education to draw from. Project Look Sharp authored several environmental media literacy curricula based on constructivist pedagogy (Sperry 2020), and Gabriele Hadl (2016) penned a Japanese textbook on ecomedia literacy. Critical media literacy scholars connect a variety of social concerns, such as ideology, class, patriarchy, racism, gender, violence, and war with ecojustice (Kellner and Share 2019). Jocelyn Miller et al. (2021) associate media and science literacy with evaluating climate claims. Jennifer Rauch’s (2018) “slow media” approach joins media literacy and “unplugging” to cultivate environmental awareness. Greg Garrard’s (2016) edited volume offers methods for teaching ecocriticism in the classroom. Tema Milstein et al. (2017) bridge environmental communication with pedagogy. As a contribution to the

field, I was involved with co-editing (along with Jeff Share and Theresa Redmond) a special joint issue of *The Journal of Media Literacy* and *Journal of Sustainability Education* on ecomedia literacy, which includes over 20 articles and feature case studies and teaching examples. My book *Ecomedia Literacy: Integrating Ecology into Media Education* (López 2021) bridges research with pedagogical approaches from ecoliteracy, education for sustainability, systems thinking, critical media literacy, science literacy, and visual studies.

The divergent paths and debates in media literacy are beyond the scope of this chapter; however, I want to highlight how ecomedia literacy's holistic approach does bridge different strands within the field. Standard media literacy principles and research methodologies are used to analyze/deconstruct media texts by drawing on ecocriticism in combination with content, semiotic, narrative, discourse, and multimodal analysis. Students research media and technology organizations to develop information literacy. Environmental impacts are calculated utilizing environmental, climate, and science literacy. News literacy is used to detect and critically engage media bias, propaganda, and disinformation. Artistic expression and aesthetics are explored through the literacy of media language. To holistically inventory media infrastructures, students require systems literacy. Engaging media affect and sensory experience can be achieved through mindfulness and medium literacy.

The suggestions in this chapter are prompts to inspire thinking across curricula and levels. This is not aimed at more advanced studies but more for “beginners” with entry points into basic media and journalism studies to include both theory and practice. In addition to giving an overview of curriculum development, I offer two analytical methods that can be used for specific research projects: the “ecomediasphere” and the “iceberg model” of systems thinking.

Ecomedia Studies and Curriculum Development

A curriculum overhaul is not necessary to get started. One can make minor changes or additions to build confidence and familiarity with the material (López, Share, and Redmond 2022). An essential move is to challenge the conventional definition of media to update it with the underlying premises of ecomedia discussed in this *Handbook* (media that are *about* and *of* the environment). Educators can then include a lesson that reflects the environmental impacts of various media being taught, whether it's Web 3.0 (blockchain, NFTs, cryptocurrencies), AI, film, video games, radio, news, TV, photography, or anything else covered in this volume. In addition to classic reading/textual analysis, there are various journalistic and production activities that can be utilized in ecomedia literacy, many of which are inspired by David Buckingham's (2019) extensive survey of media literacy education practices (for detailed examples see López 2021, 231–75).

Students can track their experience of space, place, and time with self-reflective practices, such as slow media approaches advocated by Jennifer Rauch (2018) by doing digital sabbaths, fasts, or detoxes that are meant to help reduce media usage and renegotiate media habits through mindfulness (for a nuanced discussion of digital “opting out,” see Kuntsman and Miyake 2022). Students can engage how media impact a variety of emotional responses and physiological phenomena, such as alienation, biophilia (love of nature), biophobia (fear of nature), technophilia (love of technology), sense of place, sublime, technology addiction, disrupted natural biophysical rhythms, cognitive dispositions that drive responses to media (such as selective exposure or confirmation bias), and mental health. Sound, color, shape, form, and light are nervous system stimuli and should be explored as physiological phenomena. Sara Pink (2015) has developed sensory ethnography by exploring ways in which smell, taste, touch, and vision can be interconnected and inter-related within research. Phenomenological inquiry (Parks 2016, 148) and auto-ethnography are

other methods. These approaches can broadly be defined as cultivating media mindfulness, which is the ability to be conscious of how our cognition and sensory experience interacts with media.

Building on Paulo Freire's (Freire and Macedo 1987) concept of reading the world as text and engaging in praxis, research projects and outcomes should be built around problem finding and problem solving that directly relate to students' lived experience. To achieve this, the method of backward design (see Wiggins and McTighe 2005) is recommended by practitioners of education for sustainability. It starts with what you want students to know and then works backward to scaffold skills and concepts. As a solution-based method, it's based on a predetermined rationale, such as how the curriculum unit prepares students to engage in eco-citizenship and technology design. It combines an essential question (a compelling question that focuses on teaching and drives inquiry and learning), outcomes (what students should understand, know, and be able to do), and assessment method (evidence used to demonstrate student learning) (Cloud Institute for Sustainable Education 2011, 60–61). For example, learners can be charged with the following query: How can the news media ecosystem be redesigned to afford collective climate action?

Ecomediasphere

Students can engage in holistic ecomedia analysis using a heuristic I developed called the “ecomediasphere,” an analytical tool that facilitates the exploration of the symbolic, cultural, material, phenomenological, and ideological character of ecomedia objects (López 2021). An ecomedia object is a boundary object: something that has commonly agreed upon characteristics, but whose meaning and function changes according to context. For example, a smartphone will have different purposes according to designers, manufacturers, app developers, workers, cobalt miners, and users. An ecomedia object can scale from micro (text/gadget) to macro (ICTs, hyperobjects). The unit of analysis is one of four categories: (1) representational media text (advertisement, news article, film, TV commercial, website, food packaging, NFT, etc.); (2) platform (streaming service, social network, or media organization); (3) gadget (smart phone, tablet, computer, etc.); or (4) hyperobject (an amorphous disburbed phenomena that behaves like a system, such as the internet, cryptocurrency, disinformation, or media industry). Representational ecomedia objects that deal specifically with ecological issues have the dual condition of being “images of ecology” while also being part of an “ecology of images,” i.e., an ecology of meaning systems (Ross 1994). Likewise, they are also “resource media” that are as essential and material to daily life as water and power (Bozak 2011).

Using the ecomediasphere as an orientation device, the ecomedia object is explored from four different zones: ecoculture, political ecology, ecomateriality, and lifeworld (see Figure 9.1). If we study climate disinformation as an ecomedia hyperobject, the *ecocultural* perspective examines the kinds of values driving the debate around the climate crisis. This means attending to how particular stories/memes/news items are shareable/spreadable through shared belief systems. *Political ecology* addresses how disinformation is driven by and thrives as a result of media oligarchy, carbon- and consumer-based capitalism, attention economy, far-right media ecosystems, and surveillance capitalism. This includes the impact of algorithms, clickbait, and actors producing climate disinformation. *Ecomateriality* focuses on medium properties, such as the affordances and constraints of a particular medium (like using a Facebook app on a smartphone) but also on the material infrastructure and energy consumption of surveillance capitalism at the heart of climate disinformation (López and Frenkel 2022). *Lifeworld* addresses the cognitive dispositions and sensory experience of individuals. One of the biggest obstacles to climate action is cognitive. As systems thinking theorists assert, people are invested and entrenched in worldviews, which are disrupted by the reality of the climate crisis (Meadows 1991).

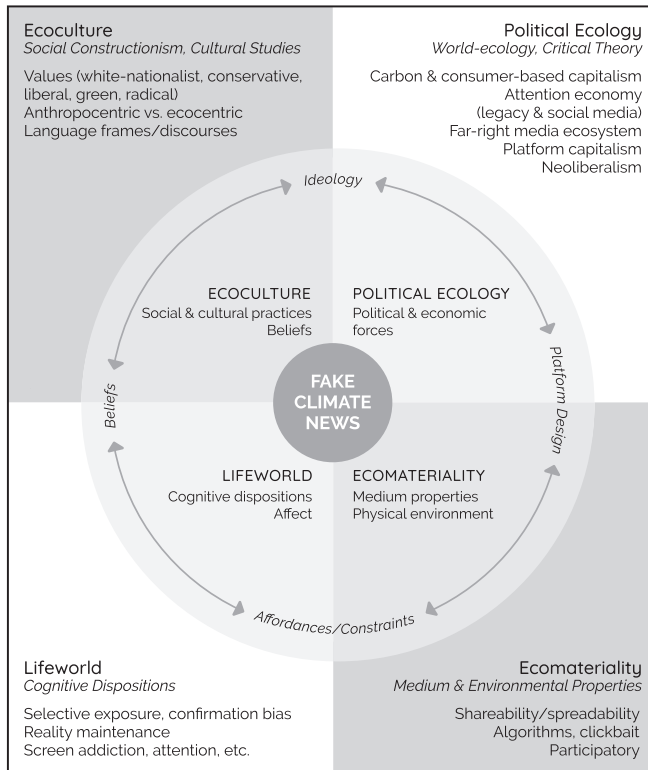


Figure 9.1 The ecomediasphere using fake climate news as the ecomedia object. Illustration by Priya Sage

The ecomediasphere guides students toward answering larger questions (like those developed using the backwards curriculum design method):

- Structure the class by dividing the semester into four zones as a general survey of ecomedia issues or choose one ecomedia object as the focus of the entire course and divide the schedule into four zones.
- Have students perform an analysis of an ecomedia object as a specific assignment (choosing from the categories of text, gadget, platform, or hyperobject).
- Assign students to investigate a personal gadget according to the four zones.
- Work in groups to study a category of ecomedia (streaming, print, phones, sound, video games, alternative media, art, film, entertainment, etc.) and do a multimedia presentation or build a website to go with it.
- Substitute the four zones with the elements: fire (energy), water, air, and earth, and examine the ecomedia object according to the lens of those elements.

In choosing ecomedia objects to study, one doesn't have to go for examples of environment per se (i.e., "mimetic or realistic depictions of nature") but can choose them for their *environmentality*, "for evidence of the way a text's language and form encodes a construction of and subsequent interaction with that text's environment" (James 2016, 66). Ecomedia objects should also be explored from the perspectives of those traditionally disenfranchised from the power structure.

Drawing insight from feminist standpoint theory, which situates knowledge and experience from the perspective of women and marginalized populations, students should study ecomedia objects from different vantages to explore power relations. For example, what if students examined their personal gadget from the perspectives of a Congolese child laborer extracting rare earth minerals, Chinese FoxConn assembler, “playbour” gamer, Amazon warehouse worker, or big box store sales associate? Roleplaying activities can be used to explore these different perspectives.

Iceberg Model of Systems Thinking

When probing an ecomedia object we are asking, how is the world in it? How is it in the world? And, where does it come from? (see Dumit 2014). One way of achieving this is the iceberg model of systems thinking, which treats ecological problems as design challenges rooted in knowledge systems (Goodman 2002). This approach posits that systemic problems are unsolvable if we only react to events without examining how they are caused by underlying patterns (trends over time), systemic structures (policies, laws, infrastructure, how parts connect), and knowledge systems (assumptions, beliefs, attitudes). For example, the proverbial tip of the iceberg is the visible and immediate event, such as ecological disasters like forest fires, hurricanes, or oil spills. Normally they are treated as momentary catastrophic occurrences in which the damage is repaired but business as usual continues without solving the underlying problem that caused the event to occur. Systems thinking attempts to transform the core pattern that caused these events by exploring beneath the surface of the tangible event, such as restructuring our system to reduce or eliminate fossil fuel emissions that trigger extreme weather. It is at the deepest level, knowledge systems, where solutions grow, leading to the design of new systems.

When applied to ecomedia literacy, the *event* is the expression of an ecomedia object. In the case of climate disinformation, the media object is a tangible *cultural artifact* (meme, clickbait, advertorial, publicity, video/film, social media post, news article, podcast, etc.). The first level underneath the visible surface features *patterns* and *trends* over time, such as how climate disinformation exists as part of a range of texts distributed throughout social media, search engines, and various media ecosystems over time. This requires recognizing framing patterns that connect discourses across different texts to build a particular story about the world, such as rightwing ideology, or market ideology and discourses about the ecological transition. A deeper inquiry delves into *system design*: the political, economic, and cultural structures that interact with and influence the production of climate disinformation. Understanding this requires developing an overview of legacy media, surveillance capitalism, the rightwing media ecosystem, and the financial and intellectual backend of the fossil fuel industry that exploits these different systems. It’s essential to examine cultural norms and analyze hegemonic global capitalist institutions (including Big Tech) that inform how and why particular patterns of news, propaganda, and disinformation emerge over time. This requires exploring the economic status quo that enables a feedback loop between fake climate news, platform algorithms that amplify outrage and conspiracies, and digital media infrastructure that exacerbates the climate crisis. The wider social concerns of political polarization, post-truth epistemological crisis, structure and funding of rightwing media, and the market failure of journalism need to be addressed at this level. Here, we should ask, what long-term tech and media reform strategies are necessary to address this? A broader systemic analysis demonstrates that there must be a major shift in how media and tech structure their businesses and how governments regulate these industries.

At the deepest level of analysis is *knowledge systems*, in particular the anthropocentric worldview and ideology that drives the whole system of climate disinformation. Fake climate news circulates in a taken-for-granted fossil fuel cultural environment that shapes our beliefs about

the world (Corbett 2021). The dominant worldview of media and tech accepts risks associated with the extraction economy. This status quo business environment normalizes sacrifice zones and the externalization of costs to the periphery of the global economy. In the United States, the most ardent defenders of fossil fuel culture are often steeped in a worldview of petromasculinity, evangelical Christianity, and white nationalism (López 2022).

The following four levels of inquiry can be used to perform an iceberg systems thinking analysis.
Event: What is happening?

- *Systems thinking (react)*: Describe tangible elements (what we can see, hear, or touch) and what we notice.
- *Elements to identify*: Sensory experience; cognitive responses; form; aesthetics; and medium properties (affordances and constraints).
- *Ecomedia elements*: Experience of time, space, and place; materials (minerals, chemicals, etc.); and emotional experience.
- *Guiding questions*: What media languages are used? What are its medium and aesthetic properties? What is your sensory and emotional response? What can you do or not do with it? What are its material “ingredients”?
- *Ecological evaluation*: Does it invoke biophilia (love of nature) or biophobia (fear of nature)? Does it create alienation, disconnection, or connection with the world? What attention does it require? Are there any mental health impacts? Are there addictive characteristics?
- *Methods, theories*: Formalism, affect, phenomenology, aesthetics, media grammar, and media ecology.

Patterns of behavior: What are trends over time?

- *Systems thinking (anticipate trends over time)*: Map and diagram.
- *Elements to identify*: Discourses, frames, symbols, stereotypes, distribution outlets, locations, genre conventions, intertextuality, and cultural and social positionality.
- *Ecomedia elements*: Identify and map ecological discourses, eco-symbols, eco-metaphors, coding of environmental ideology (anthropocentric vs. ecocentric), and binaries (like Nature/nature, human/animal).
- *Guiding questions*: What is the story being told? How is it being told (narratives, symbols, discourses, metaphors)? What symbolic and cultural resources are required to understand it? How does it connect to one’s own experience? How is one able to respond to it?
- *Ecological evaluation*: How is the environment/ecojjustice represented or absent? What is its ecological meaning or significance? How does it promote particular ecocultural identities? What are its environmental impacts? What media ecosystem does it belong to? How is it coded for particular environmental ideologies? What communities does it impact?
- *Methods, theories*: Semiotic, narrative, critical discourse analysis, ecocriticism, ecolinguistics, environmental humanities, and environmental communication.

Systemic structures: How are parts related? What influences patterns?

- *Systems thinking (design)*: Identify policies, laws, infrastructure, and how parts connect.
- *Elements to identify*: Economic structure of organization/s producing object; infrastructures required for it to be distributed and exist; regulations and laws that govern its production and use; explore platform design.

- *Ecomedia elements*: Social, economic, and financial goals of organization and their environmental impacts; economic model and conditions it was produced under and its energy requirements; recognize if it's part of an open or closed system.
- *Guiding questions*: How was it made? Why was this made and produced? What is its purpose and function? What problem/s is it trying to solve? Who made this (individual, NGO, corporation, state, or other kind of organization)? What kind of organization (corporation, for-profit, nonprofit, public, audience supported)? Who is the intended audience/target market? What media ecosystem does it belong to? What infrastructure and resources does it require?
- *Ecological evaluation*: Is it ecologically beneficial or harmful? Is it fair, accurate, truthful, authentic, and credible? What is left out? Is it real and true to life? Does it benefit, harm, or disadvantage anyone? What kind of politics does it express? How does it perform ideological work? How is it disposed of or repurposed? Are there systemic reforms or policy changes that need to be made to regulate how it is made? Does it promote consumerism or greenwashing? What kind of energy infrastructure does it require? Does it promote or limit eco-citizenship? Are there neocolonial discourses that reproduce Orientalism or denigrate BIPOC? What kind of agency does it promote?
- *Methods, theories*: Political ecology, ecomaterialism, infrastructure studies, cultural studies, media studies, ecocinema studies, and postcolonial studies.

Knowledge systems: What values, assumptions, and beliefs shape the system?

- *Systems thinking (transform)*: Assumptions, beliefs, attitudes, and epistemology.
- *Elements to identify*: Underlying, taken-for-granted beliefs about how the system should function; stories being told about how we should live.
- *Ecomedia elements*: Identify environmental ideology and ethics; epistemological and ontological systems; ecological stories-we-live-by.
- *Guiding questions*: What is valued? How does the ecomedia object express ideology? What is marginalized, othered, or devalued? Are “common sense” assumptions being reinforced or challenged?
- *Ecological evaluation*: How would you evaluate it according to ecojustice? Whose perspective is missing? Is the story ecologically beneficial or harmful? Are there risks associated with its production or usage?
- *Method, theories*: Social constructionism, critical realism, ecojustice, ecofeminism, cosmovisions, traditional ecological knowledge, and eco-ethics.

In sum, the ecomedia literacy method analyzes texts to extrapolate much larger social concerns and systemic processes that are indexical of underlying structures, patterns, and knowledge systems. Harkening to Foucault's notion of discursive formations, the event (as expressed in an ecomedia object) is a node in the historical discourse of the particular moment it was produced.

Conclusion

Ecologically oriented education fosters a paradigm based on systems thinking and the ecocentric value of the interconnectedness of humans, the more-than-human world, technology, and economics. To achieve this, we can use backward curriculum design based on problem-solving and solution-generating outcomes. This enables students to engage in scenario and world-building activities to envision different futures; problematize human–nature binaries; transition away from

abstract knowledge to experiential learning grounded in local ecosystems; contemplate models of political ecology based on ecological economics; and remediate ecology metaphors to encourage learners to perceive media as embedded within living systems. These approaches seek to rebalance the study of media and promote ecocentric knowledge systems for an ecojust world.

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