

Educational Reforms in an Emergent, Relational and Co-Dependent World Being Challenged by Climate Change

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One of the dominant challenges facing educational reformers educated in the last decades of the 20th century is recognizing how the conceptual frameworks for understanding the social justice issues of that era failed to address what scientists were reporting about climate change. Now that the rate of changes in the Earth's ecosystems is now impacting people's daily lives in terms of droughts, changes in both the warming and acidification levels of the world's oceans, the rising sea levels due to the melting of glaciers, the disappearance of habitats and species, the emancipatory vocabulary handed down from the long tradition of social justice struggles in the West now needs to be revised.

This does not mean giving up on educational reforms, or on challenging how the West's consumer-dependent industrial and now digital revolution that continues the old forms of injustice and even new ones as the process of globalization continues. What needs to be revised is how the vocabulary that supports the West's way of interpreting progress has been framed both the social justice agenda of educational reformers as well as the market liberal agenda of computer scientists, corporations, and the government's foreign policies. The vocabularies that continue to support the idea of progress that was part of the legacy of the Enlightenment thinkers of the late 16th and 17th century includes **individualism** (with the ideal being the autonomous thinking individual), **change** and **innovation**, **critical inquiry** and **science** that overturn traditions, **transformative thinking**, **freedom**, and **literacy** that leads supposedly to objective knowledge and now data that are the sources of **individual empowerment**, the **students' construction of their own knowledge and values**. But the most powerful word for legitimating ideas, policies, innovations, and the continual quest for the new and experimental is **progress**, which is understood as a linear move into the future that overcomes the backwardness of the past—that is, traditions. It did not matter that neither the Enlightenment thinkers, nor today's scientists such as Carl Sagan who claimed that "we give our highest rewards to those who convincingly disprove established beliefs" (Sagan, 1997, 35) understood that social justice achievements such as habeas corpus became a tradition. By reducing traditions to abstractions Sagan and other

anti-tradition thinkers avoided making explicit the taken for granted traditions they daily relied upon.

Following in the ethnographically uninformed thinking of John Locke, René Descartes, John Dewey, and Paulo Freire, most of today's critical pedagogy reformers continue to share the same Enlightenment view of traditions as sources of oppression and backwardness. What has gone largely unnoticed by these educational reformers and their many followers is that today's computer scientists and market liberal/libertarian heads of corporations also rely upon this same Enlightenment vocabulary to justify overturning cultural traditions throughout the world in order to promote a consumer-dependent and environmentally destructive lifestyles.

The irony is that while none of the Enlightenment thinkers had a deep cultural understanding of the traditions they took for granted—even as they relied upon the many traditions built up over generations that enabled them to write their books. In effect, they relied upon the long standing tradition of the early Greeks of encoding their ideas in the printed word that fosters abstract thinking that, in turn, marginalizes awareness of the lived cultural patterns that connect within different face to face relationships. (Havelock, 1982) The anti-tradition abstract theorists of the past, as well as those still under the spell of the Enlightenment legacy that has morphed into today's progressive ideologies, ignored that the crafts and skills used to create their dwellings, grow their food, provide the artistic performances of the day, and even the early gains in social justice ignored how intergenerational traditions were passed forward. An even greater loss is that if these Enlightenment thinkers had been less ethnocentric and less ignorant of environmental limits, they might have learned from indigenous cultures the interconnections between their traditions and their development of ecological intelligence.

In addressing how educational reformers can avoid the limitations in how the silences and misconceptions of Enlightenment thinking are still being carried forward by computer scientists, by scientists driven by hubris to genetically re-engineer the biological world, and by academics, teacher educators and curriculum theorists, it is important to remember that one of the traditions of Enlightenment philosophers, and today's followers, was to ignore the life ending experiences of cultures that failed to recognize environmental limits. In *Collapse: How Societies Choose to Fail or Succeed* (2005), Jared Diamond documents the experience of cultures that failed to recognize that their forms of intelligence were unable to understand the emergent, relational, and co-dependent nature of the ecological systems they were dependent upon. The vocabularies that support the West's way of

understanding progress as a process of emancipation from traditions, and for the market liberals/libertarians as leading to ever more profits, are also lacking what is distinctive about the different cultural expressions of ecological intelligence.

Before addressing the changes that need to be considered in becoming part of the effort to slow the rate of environmental degradation and in recognizing how the globalization of the West's modernizing and progressive agenda continues the West's messianic tradition of economic and technological colonization, it needs to be emphasized that what separates today's social justice educators from the market liberal/libertarian promoters of consumerism and a lifestyle increasingly dependent upon the digital technologies that have already put us on the slippery slope to a techno-fascist future, is that those in the market liberal/libertarian tradition of thinking are focused on increasing profits, exploiting workers, and on overturning civil liberty traditions essential to democracies. The social justice educators, while taking for granted the same emancipatory/progress oriented vocabulary, are critical of how this vocabulary is being used by market liberal/libertarians to justify the exploitation of others.

Toward a Vocabulary that Reframes How to Think About Educational Reforms that Slow the Rate of Environmental Degradation and the Emergence of a Techno-Fascist Future.

As educational reformers begin to recognize that the warnings of environmental scientists must now be taken seriously they are likely to be caught in the same conceptual double bind as the 60 or so percent of the public that now acknowledges being concerned about what the future holds for them—but are unable to consider the nature of the lifestyle changes that must be undertaken. The double bind is rooted in being educated to think of themselves as autonomous individuals, in an environment they have traditionally exploited, and in a world of unending progress. That is, awareness that the ecological crisis is also a cultural crisis where people cannot recognize alternatives to the misconceptions that are at the core of the Enlightenment progress-oriented paradigm confront curriculum theorists with the same double bind.

The way out of this double bind, where the long-held taken for granted traditions of progressive thinking deepen the crisis, is to begin to think within an ecologically informed paradigm that takes account of how all forms of life are emergent, relational, co-dependent, and participants in different ecologies of information (semiotic) exchange systems. One of the characteristics of understanding that we do not live in a world of

autonomous entities and print-based abstractions such as the idea of progress, as the current paradigm holds, is that ecologies of cell behavior, of patterns of insect communication, personal identities, oral and print-based communication, ideologies that justify exploiting workers, and so on, have a history. All ecologies involve observable patterns and relational networks of communication, and it is these observable connecting patterns that provide evidence of whether the ecology is headed in a sustainable direction, or is in a self-destructive mode. Relying upon an ecological paradigm as the source of knowledge means giving close attention to the emergent nature of lived cultural and environmental patterns rather than relying upon the printed word which generally overlooks the taken for granted interpretations of the writer and later the reader—as well as the interpretation of classroom teachers and professors who are often unaware of their own taken for granted assumptions.

The vocabulary that supports the exercise of ecologically informed intelligence and intergenerational knowledge includes the following: **ecological sustainability, ecological intelligence, intergenerational knowledge and skills, traditions of social justice, indigenous knowledge and skills, wisdom, critical inquiry leading to what should be changed and conserved, double bind thinking, cultural/bio conservatism, non-monetized relationships and practices, face to face communication, living in an interpreted world, ethnically diverse cultural commons, enclosure of the commons**, and so forth.

This vocabulary is also relevant for understanding how cultural and natural ecologies differ from the market liberal/libertarian (Enlightenment) paradigm being promoted by computer scientists, engineers, and corporate heads who equate progress with collecting data that can be translated into algorithms that eliminate the need for workers while amassing huge profits. Long term memory is being replaced by short term memory, abstract relationships are replacing face to face relationships, monetized activities and relationships are leading to digital profiles that are being sold to corporations and governments, intergenerational knowledge and skills essential to viable cultural commons that have smaller ecological footprints are being replaced by the seeming convenience and efficiency of online consuming, and the seeming advantages of the Internet are also undermining privacy and freedom from hackers, cyber attackers, and extremist groups. As the ability of governments and corporations to gather data to anticipate possible behaviors, which is now called “predictive policing” and to posting millions of photographs of people (without their consent) on the FBI network that goes out to all the nation’ police agencies, we are fast losing

our civil liberties—which online learning is not likely to bring to the attention of students. How does one explain the willingness of so many people to exchange their privacy for the conveniences of the Internet of things and processes? Perhaps the myth of progress has become a religion that promise salvation from the forces of evil.

What the Vocabulary of an Ecological Paradigm Beings to Awareness: How to Reduce the Human Impact on Natural Systems and to Recovering a Degree of Security from the Increasing Threats of the Digital Revolution:

As suggested earlier, an ecological paradigm involves a reversal in how language functions within the Enlightenment paradigm where print-based and thus abstract vocabularies influence both awareness and interpretations of the ecologies of behaviors and communication encountered in daily life. The abstract vocabulary that represented traditions as backward, women as conceptually limited, autonomous individuals as original thinkers, and now data as objective, led to ignoring the complexity of peoples' lives that did not fit with the stereotypes of a print-based abstract world. The lack of a vocabulary for understanding that all forms of life are dependent upon robust natural systems, like the inability to recognize how women were being repressed, even led social justice reformers of earlier eras to ignore how the biases encoded in the language framed both awareness and what was ignored. To make the point more directly, academics across the disciplines have taken for granted the core Enlightenment assumptions, yet the majority were well behind other segments of society in recognizing gender bias, and now in recognizing the threat of the digital revolution to our civil liberties and to the cultural commons that represent community-centered lifestyles that have a smaller ecological footprint.

The role of language within an ecological paradigm, which needs to be introduced to students, can be seen in how giving careful attention to the emergent, relational, and co-dependent patterns in both natural and cultural ecologies leads to reframing the meaning of words in ways that are informed by local contexts and an awareness of the cultural patterns that connect. In contrast to print-based Enlightenment influenced thinkers who took for granted the autonomous nature of a plant and data, ideas such as freedom, free markets, and property, and other entities that supposedly have an autonomous existence, the Buddhist and deep ecological thinker, Thich Nhat Hanh, explains every aspect of the life world as the emergent, relational, and co-dependent. This is overlooked when the word “flower”, for example, is named as an autonomous entity—that is as a plant.

Following his statement that “nothing can exist by itself alone” he goes on to give an account of what can be observed if our thinking and awareness have not been limited by the misconceptions handed down from the past.

Looking deeply into a flower, we see that the flower is made of non-flower elements. There is nothing that is not present in the flower. We see sunshine, we see rain, see clouds, we see the earth, and we also see time and space in the flower. A flower, like everything else, is made entirely of non-flower elements. The whole cosmos has come together in order to help the flower manifest herself. The flower is full of everything except one thing: a separate self, a separate identity. (2002, 47-48)

All aspects of both natural and cultural ecologies can be described the same way.

The use of a metaphorical language whose meaning were framed by the analogs settled on in the past and passed forward as the taken for granted way of thinking, such as the ideas of progress and emancipation from traditions, the objective nature of data, the ecological crisis, and so forth, would all be understood differently when our language is informed by an awareness of relationships—and that each of the relationships also has a history that continues to influence the present and even the future. The use of nouns hides the emergent, relational and co-dependent nature ecological world within which we live—which is explained so clearly by Rupert Ross. (2006) How the life world is also misrepresented by the use of nouns and pronouns is that the history of words such as data, intelligence, progress, God, I, property, globalization, and so forth, are ignored.

Curriculum Reforms that Contribute to Exercising Ecological Intelligence:

Just as key abstract ideas and traditions, such as encoding knowledge in print and now representing it as data, set the West off on an ecologically unsustainable pathway, there are other key misconceptions that need to be recognized if university reforms are to address the cultural and linguistic roots of the ecological crisis. The following four areas represent the starting points, which need to be expanded as different ethnic groups begin to assess which of their traditions will contribute to slowing the rate of environmental degradation and which have been imposed on them by the colonizing efforts of the West.

(A) Promoting Relational Thinking:

As will be explained later, there are many language processes that undermine relational thinking and thus ecological intelligence. Classroom teachers can partly overcome the current tendency of reinforcing what can be called the West's ontology of isolated entities, things, and events that are given a sense of conceptual coherence by relying upon the taken for granted interpretive framework acquired from significant others who were, in turn, socialized to think in the metaphorical and largely noun-based vocabulary inherited from the past. The ontology (what is represented as reality) of an emergent, relational, and co-dependent world can be reinforced by asking students in the early grades to consider the experiential differences between the printed and spoken word, between sharing a meal with their family and friends and eating industrial processed food, between face to face conversations with friends and communicating through an iPad or cell phone, between carrying for a garden and purchasing industrial processed food, between learning a skill from a mentor in one of the arts and being a consumer of someone else's talents. Learning to give explicit attention to the emergent, relational, and co-dependent patterns that connect in the above examples reinforces the exercise of ecological intelligence. As learning to think relationally is undermined by other taken for granted patterns in the culture, such as being told by the teacher to figure things out for yourself or construct your own idea (which reinforces the myth of being an autonomous individual thinking about the external world) it will be necessary for teachers to pose questions that prompt students to consider aspects of their taken for granted experience that previously were ignored.

Promoting relational thinking in the later grades can involve a wider range of examples, from having students consider the environmental impact of hundreds of thousands of people driving to see their favorite football team, to considering the relationship between the history of scientific achievements and the growing number of prominent scientists now engaging in scientism, to examining who benefits from reducing people's experience to data and from the growth of surveillance technologies, to how the use of printed maps and treaties were part of the colonizing technologies, to how the industrial system of production, now driven by digital technologies that accelerate the process of automation and cultural change, contributes to high levels of unemployment that, in turn, fosters political extremism, to how online consumerism leads to the use of more delivery trucks that release more carbon dioxide into the atmosphere, to where we got the idea of progress and that technologies are both an inherently progressive force and, at the same time, culturally neutral.

Relational thinking needs to be promoted by using examples from the different cultures represented in the classroom, and even from gang cultures. For example, students can be asked to examine the relationships between racial differences, levels of unemployment, prison populations, and the privatization of the prison systems. Other relationships that need to be explored include how the increased reliance upon the Internet affects intergenerational face to face communication and thus the forms of knowledge and skills that enable people to be less reliant on the money economy—which leads to exploring alternative economies and cultural differences in how wealth is understood, to considering how the previously invisible minority cultural groups are now represented in television sit-coms and in advertising as driven by the same pursuit of fun, silliness, and consumerism as the members of the dominant white culture. Making relational thinking a part of the curriculum can focus on the mundane, on what students want to explore, and even the deeply important cultural issues and relationships that may not have occurred to students as affecting their future well-being. As prior socialization to the autonomous world of things and stand-alone entities reinforced by the noun dominated nature of the English language still dominates most students' taken for granted world, it is necessary to continually remind students that thinking relationally is part of learning to exercise ecological intelligence—of learning to recognize the patterns that connect within the emergent, relational, and co-dependent worlds of the cultural and natural ecologies that their futures depend upon.

(B) Demystifying Language Issues:

Making explicit the misconceptions about the use of language also involves learning to think relationally—which needs to be explained to students. But here the focus should be on three misconceptions that are particularly relevant to understanding how they affect power relationships and why the Ontology of abstract thinking continues to be an ecologically destructive and colonizing force. These include the failure to understand the metaphorical nature of our largely taken for granted vocabularies, how print and now data (for all their important uses) reinforces abstract thinking that undermines the exercise of ecological intelligence, and how face to face intergenerational communication is essential to revitalizing the cultural commons (which will be explained later).

Understanding the metaphorical nature of language is especially important to becoming aware of how our taken for granted vocabularies carry forward the misconceptions and silences that are at the root of so many of the ecological and social justice problems we now face. The question for

many Americans, including classroom teachers and university professors, is: How have the misconceptions that fail to represent all living systems as relational, emergent, and as networks of information exchanges led to another misconception that we chose the words that express our own ideas and that represent the nature of the external world of facts and objective knowledge. Why should we take seriously what seems like an absurd and difficult to understand explanation of the metaphorical nature of our taken for granted vocabularies? As I have written extensively on the nature and importance of understanding the metaphorical nature of our vocabularies, including why Friedrich Nietzsche got it right and George Lakoff and Mark Johnson got it wrong, I will provide here only a summary of key points. (2011, 140-155; 2013, 41-62)

The feminist movement, the shift in thinking of the environment as an endlessly exploitable resource, and the growing awareness that the digital revolution is bringing about cultural changes that do not fit the old understanding of progress provide examples of three metaphor that encode the thinking of earlier eras. That is, the meaning of the words “woman”, “environment”, and “progress” were framed by the analogs (what something is like) settled upon by influential thinkers in the past who were carrying forward the misconceptions and silences of their era. For example, the *Book of Genesis* provided the analogs for understanding the subordinate role of women. The analogues that framed the meaning of the word progress, turning it into a universal myth, were derived from the advances in print, from the early stages of modern science, and more efficient and profitable technologies that became the analogs for the mechanistic interpretative framework (root metaphor) for understanding even organic processes—including the human brain.

The taken for granted meaning of most of our vocabulary ranging from “civilization”, “tradition”, “primitive”, “individualism”, “data”, “work”, “poverty”, “mankind”, God, “science”, “technology”, and so forth, were framed by the analogs settled upon in the past—and intergenerationally reproduced as new members of the language community relied upon the meaning of words framed by the analogs settled upon in the past. That the analogs that frame the meanings of the vocabulary can be changed is usually not explained, even though feminists and environmentalists continue to introduce different analogs that highlight what is problematic about the old analogs.

Relational thinking can be made explicit as part of helping students examine the nature of the analogs that frame the meaning of words they otherwise take for granted. The political nature of the taken for granted

metaphorically encoded vocabulary can be seen in how different words privilege certain groups over other, which is now being recognized in terms of gender, ethnic, and racial differences, Relational thinking is also involved in examining how the taken for granted vocabularies of market liberal/libertarians, prevent them from recognizing that there is an ecological crisis and that it is leading to a catastrophic endgame. Exploring how the use of nouns both serves to hide the metaphorical nature of most words but also marginalizes awareness that life forming, sustaining, and destroying processes are emergent, relational, and do-dependent, will lead to other important insights.

(C)How Print and Data Undermine Awareness of the Emergent, Relational, and Co-Dependent World in Which We Live:

The taken for granted view of print-based cultural storage and communication, which is now being replicated in how the authority of data is being understood, has been focused on the positive contributions of these two Janus technologies. How they both reproduce the Enlightenment view of individual intelligence, a human-centered world, and equate change with progress is less recognized. And how they also reinforce the tradition of abstract thinking that undermines an awareness that we live in an emergent, relational, and co-dependent cultural and natural ecologies. As the benefits are well understood, the focus here will be on what has generally been ignored. Again, as I have written extensively on how print and now data undermine the exercise of ecological intelligence that will enable people to recognize how to live less consumer and environmentally exploitive lifestyles, I will only list here what has generally been overlooked about the limitations of print and data. (2012, 71-106; 2016,) The following points not only need to be discussed by students, but also subjected to a deep ethnographically informed examination of what aspects of their own experience cannot be fully represented in print and by data.

In order to understand the overlooked limitations of print and data it needs to be kept in mind that impermanence, rather than fixed and autonomous entities characterizes all life forming and sustaining processes. Print and data provide an abstract understanding , which includes the following: (a) both provide an account that provides only a surface knowledge that lacks depth in representing local ecological contexts; (b) printed and data-based accounts provide only a snapshot of the flow of experience (which can be tested by obtaining a printed account of a crashing wave or an ongoing conversation); (c) what is committed to print, even when used by a gifted writer, too often takes on a life of its own and becomes

reified as a universal, which can be seen the abstract theories of Western philosophers and social theorists;

(d) the abstract thinking reinforced by print and data-based accounts is inherently ethnocentric as it ignores the emergent, relational, and semiotically complex networks of communication taken into account in oral cultures. (That is, face to face communication often involves historical memory, awareness of what is being communicated by the Other, critical thought, awareness of traditions, and even empathy); (e) what is committed to print and represented as data encodes the taken for granted assumptions, cultural interpretative frameworks, and silences acquired earlier in the writer's and data collector's process of primary socialization to thinking in the language handed down from the past; (f) because of the limitations accompanying the use of print and data, and the cultural tradition of thinking of language as part of a conduit, that is, a sender/receive process of communication, both the printed word and data are too often assumed to represent objective facts, information, and data; (g) the lack of understanding that the taken for granted meaning of most words were framed by the analogs settled upon in earlier times, along with the cultural convention of writing as a third person observer, leads to the widespread failure to recognize that what is written is always an interpretation, and the reader's relationship to what is written or represented as data is also an interpretation based the taken for granted thinking of earlier generations, (h) the abstract thinking reinforced by print and data leads to unequal power relationships, especially when other cultural assumptions such as when print is assumed to be evidence of a more rational and advanced civilization than oral cultures. This can be seen in how the use of maps, printed treaties, and the use of Western metaphors established ownership of the lands of indigenous cultures. (Newcomb, 2008))

(D) Toward Ecologically Sustainable and Community-Centered Lifestyles:

The ecologically sustainable community-centered lifestyles also represent zones of safety from the predatory practices of the hackers, scammers, and surveillance systems that now exist in communities throughout the world. They are called the cultural commons that enable people to be less dependent upon a money economy and the industrial systems of production and consumerism based on the myth of unending progress. The intergenerational knowledge and skills (traditions) passed forward primarily in face to face and in mentoring relationships cover the entire range cultural activities: from the growing and preparation of food, to

ceremonies, the arts that range from music, dance, poetry, to traditions of social justice, mentoring in the how to exercise ecological intelligence, vocabularies, games, craft knowledge of how to work with wood, clay, stone, and metal, to how to read what is being communicated between the natural and cultural ecological systems.

Learning through careful observation of how talents and skills are nourished within the community, how acquiring the skills connected with different cultural commons activities, and how cultural commons activities involve patterns of mutual support, should be a central focus of curriculum reform. The curriculum should encourage students to consider why cultural commons activities are less environmentally destructive than consumerism, and how they lead to being less dependent upon a money economy that will become increasingly restricted as digital technologies and the combination of market liberalism and Enlightenment ideology replace more workers with robots and algorithms. There should also be an in-depth discussion of the relational and co-dependent nature of how the cultural commons conserves traditions of local decision making, while enabling people to be less vulnerable to how digital technologies put at risk their need for security—including their moral narratives central to their sense of cultural identity.

Wealth in the cultural commons is understood as the talents and skills that contribute to the wellbeing of others, and unlike the wealth that is measured in money, it is largely immune from being hacked.

The curriculum should also introduce students to how the ideology of market liberalism/libertarianism continues to undermine what remains of the cultural commons of different cultures, as well as how according high status to print and digital based knowledge serves to undermine the cultural commons. This is where the earlier discussion of how the vocabulary that supports the myth of progress needs to be reintroduced as part of the discussion of why so many people are unable to recognize that the traditions of today's cultural commons represent alternatives to the industrial/market driven/consumer-dependent culture that is leading the world to the endgame of collapsing natural systems. This discussion should also introduce students to the many groups and movements that go by different names, such as the Transition Communities in the southwest of England, the Business Alliance for Local Living Economies, and the global spread of the Localism Movement described in the following way: <http://www.localfutures.org/wp-content/uploads/climate-action-paper.pdf>.

In addition to making different aspects of the cultural commons the focus of ethnographic studies of the community, and exploring issues related to the health of cultural commons activists as well as

their satisfaction of living lives characterized by voluntary simplicity, students need to experience the difference between engaging in cultural commons activity and a similar activity that involves a consumer relationship. What are the basic differences in terms of discovering a personal talent and developing the skills that reduce dependency upon consumerism. Many students are already involved in the creative arts, in helping others in the community, and in social justice activism—including environmental restoration projects. Their insights about the experiential differences between learning a skill and participating with others in largely non-monetized activities will help bring out what is ecologically sustainable about the cultural commons.

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