

fostering caring and curiosity for the diversity of life in nature and culture




Terralingua

BIOCULTURAL DIVERSITY

education initiative

An Overview of a New Approach to Education
and Curriculum Development





BCDEI curriculum aims to introduce students to the idea of the diversity of life in all of its manifestations (biological, cultural, and linguistic); the “inextricable link” among these manifestations of diversity; the role of local languages and traditional knowledge in connecting people and the environment and in fostering more sustainable living; the “biocultural diversity extinction crisis” that is threatening the survival of life on earth, its causes and consequences; and why youth should care and take action, both locally and globally. Our pedagogical approach promotes learning that is not abstract and passive, but rather, hands-on and engaged with the big issues that the world faces today. The ultimate goal is to stimulate integrative thinking and promote meaningful learning experience in young people, in order to foster understanding of and caring for the biocultural diversity of life, on which human well-being and the well-being of all other species depend.



Terralingua
UNITY IN BIOCULTURAL DIVERSITY



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1. What Is Biocultural Diversity and Why Does It Matter?

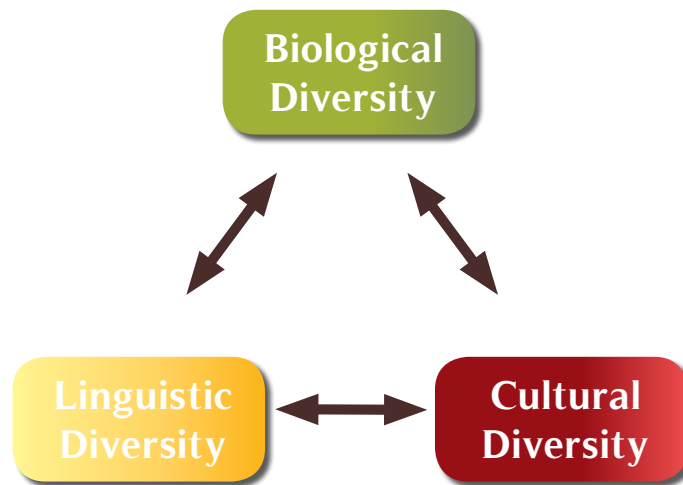


THE FIELD OF BIOCULTURAL DIVERSITY has developed over the past two decades as a new and cutting-edge domain of knowledge and action that addresses critical issues for the sustainability of life on earth (Maffi 2001; Harmon 2002; Stepp, Wyndham, and Zarger 2002; Skutnabb-Kangas, Maffi, and Harmon 2003; Carlson and Maffi 2004; Maffi 2005, 2007; Haverkort and Rist 2007; Maffi and Woodley 2010). Drawing from and bringing together many disciplines in the natural sciences, social sciences, and humanities—including biology, environmental studies, geography, anthropology, linguistics, history, political studies, and others—it is one of the most integrative and transdisciplinary research approaches to have emerged in recent years.

As a concept, biocultural diversity views the web of life as constituted not only by biodiversity (the variety of plant and animal species and ecosystems), but also by cultural and linguistic diversity (the variety of human cultures and languages). In other words, from a biocultural perspective humans are a part of, not separate from, the natural environment; and biodiversity, cultural diversity, and linguistic diversity are interrelated and interdependent manifestations of the diversity of life.

Biocultural research has extensively probed these links, providing evidence that, historically, human cultures and languages have developed through an intimate relationship and mutual adaptation between people and their natural environments. Today, indigenous peoples and cultural minorities account for most of the world's cultural and linguistic diversity, and in many cases maintain deep connections with the local environment, which are expressed through their worldviews, beliefs, and values, and through their languages, traditional knowledge systems, and practices.

Biocultural studies have also shown that diversity in nature fosters diversity in cultures and languages, and vice versa; conversely, a loss of diversity in one domain negatively impacts diversity in the others. Thriving biocultural diversity sustains the vitality and resilience



of our planet, while a loss of it threatens the sustainability of all life on earth: the life of both humans and all other species.

However, the diversity of life is on a downward trend. Biologists agree that we have entered the sixth mass extinction of biodiversity—the first one to be largely caused by human activities. The field of biocultural diversity is bringing attention to the idea that we are actually undergoing a “converging biocultural extinction crisis”—a loss of the diversity of life in all its forms: biological, cultural, and linguistic. Just over the past three decades, there has been a 25% decrease in the world’s linguistic diversity, a good indicator of the loss of cultural diversity (Harmon and Loh 2010). This trend closely mirrors trends in biodiversity loss (such as measured, for example, by WWF’s Living Planet Index).

The causes of this “converging extinction crisis” are multiple and complex, but ultimately reside in the impact of global economic, political, and social processes that lead to unsustainable use of natural resources and the erosion of cultural and linguistic distinctiveness. These processes are rapidly weakening the ecological and cultural health of the planet, and creating a growing gap in our awareness of our continued, inescapable interdependence with the natural environment.

In turn, this disconnect creates a positive feedback loop that further threatens the sustainability of life in nature and culture. More than half of humanity now lives in urban environments, largely cut off from direct contact with nature, and in an ever-more homogenized sociocultural environment. Meanwhile, the biocultural resilience of the indigenous peoples and cultural minorities that represent most of our linguistic and cultural diversity and retain their connections with the natural world is increasingly under threat. By our own actions, we are rapidly compromising the very bases of life on this planet: the biocultural life systems that sustain us and all other species on earth. Addressing this “converging extinction crisis”, and setting global society on a more sustainable course, is unquestionably one of the greatest challenges that humanity faces today.

(For an introductory presentation to biocultural diversity see: Appendix 1 – Biocultural Diversity Introduction PowerPoint.)



2. The Need for Biocultural Diversity Education

MEEETING THIS CHALLENGE REQUIRES A profound change in human values, so as to make the protection and enhancement of the biocultural diversity of life a primary societal goal. The hope lies in that, just as we humans have been the cause of the problem, so can we also be the source of solutions. The idea of biocultural diversity reminds us that we have become disconnected from the natural environment and out of balance with it. By bringing to the fore the many voices of humanity and the lessons that they convey, biocultural diversity also reminds us that there are other ways of being human that are more harmonious and in balance with nature.

As an academic field, biocultural diversity has produced a significant body of research and prompted the development of academic teaching programs in North America, Europe, and elsewhere. It has also sparked applications in professional and policy domains internationally, particularly among United Nations agencies and major conservation organizations, where it has helped shape new and more effective approaches to conservation and revitalization of both our natural and cultural heritage (Oviedo, Maffi, and Larsen 2000; Borrini-Feyerabend, MacDonald and Maffi 2004; Shrumm, 2010; Verschuuren, Wild, McNeely, and Oviedo 2010; Pungetti, Oviedo, and Hooke 2012). As an idea, biocultural diversity is attracting growing interest among the general public, through publications ranging from an emerging magazine entirely devoted to the topic (Terralingua's *Langscape*, www.terralinguaubuntu.org/Landscape/home.htm) all the way to coverage in high-profile media such as National Geographic (Maffi 2010; Braun 2010, 2011).

Achieving an even deeper and wider societal shift toward biocultural sustainability requires an effort to introduce biocultural diversity into the education of youth, the citizens and decision-makers of tomorrow. Youth have a pivotal role to play in bringing about this fundamental societal shift, through increased awareness of the vital importance of biocultural diversity for their own lives and for the sustainability of all life on Earth.

3. Terralingua's Biocultural Diversity Education Initiative

Background and Goals

SINCE 2011, TERRALINGUA HAS BEEN developing a multifaceted project, the Biocultural Diversity Education Initiative (BCDEI), to raise awareness and disseminate knowledge about biocultural diversity among secondary school teachers and students through innovative curriculum and an integrative, engaged approach to teaching and learning. Making biocultural diversity prominent in secondary education—both as a concept and as a new pedagogical approach—will contribute to creating a new generation of committed people who will embrace the value of biocultural diversity and work to sustain it for the sake of our common future.



Participants and leaders in the Ndee Bini' Bida' Ilzaah Program at White Spring Arizona, Terralingua Langscape 2:11.


The focus on high-school-level curriculum aims to harness the critical thinking and inquisitiveness about the world that youth are acquiring at that pivotal stage of their development. The transdisciplinary nature of the biocultural diversity field, which crosses over many different subject matters and brings out novel findings, patterns, and connections, is bound to awaken students' curiosity and interest, and involve them in an engaging process of discovery. The goal of the BCDEI is for teachers and students not to conventionally cover subject matter, but to innovatively and creatively discover it through the inquiry process.

The BCDEI curriculum aims at:

☞ *Introducing students to biocultural diversity as a new and timely idea.* In today's globalized world, a deep understanding of our interconnectedness and interdependence with nature and of the importance of the diversity of life in all its forms is a vital asset for students to acquire.

☞ *Highlighting the relevance of biocultural diversity in students' lives, in their local communities, and in the global community.* This is accomplished by tapping into youth's budding interest in the world around them and their place in it.

☞ *Fostering an integrative understanding of biocultural diversity.* Doing so expands students' horizons and their ability to grasp critical issues of today's complex world.



☞ *Developing students' critical thinking and research skills.* This is done by means of a variety of educational tools, such as interactive documents, maps, videos, real-world case studies, scenario exercises, and online educational forums.

☞ *Engaging students in multiple areas of academic inquiry and at multiple levels.* BCD is by its nature transdisciplinary, and cuts across the many spheres of action among which students find themselves moving – personal, familial, community, school, work, and society and the world at large.

☞ *Providing the integration of biocultural diversity studies into school curricula in the form of standards-based modules that can be suitably included in a variety of curricular contexts.* Lesson act as threads connecting multiple aspects of required content within a course, as well as making connections among different content areas.


Pedagogical Approach and Methodology

THE DEVELOPMENT OF THE BCDEI curriculum follows a constructivist learning approach (Jonassen 1999), in which the instructional plan provides multiple representations of reality, represents the natural complexity of the real world, focuses on knowledge construction, presents authentic tasks, and provides real-world, case-based learning environments, while fostering students' reflective practice.

This approach is complemented and enhanced by an inquiry-based learning framework. Teachers are conceived as facilitators of knowledge construction and awareness building and promote students' choice of topics of inquiry, spurred by lesson plan themes and by individual and group interests and questions. In this way, biocultural diversity principles and realities are connected with students' concerns and interests in a motivating and engaging manner.

Given the primary focus of biocultural diversity studies on the interdependence of biodiversity and human cultural/linguistic diversity, as well as on the impact of human actions on such relationship, the BCDEI curriculum also embraces a decision-making and social action educational approach (Banks 2003). This requires students—after going through the knowledge/awareness building and inquiry phase—to devise ways to impact local and global dynamics and problems identified in the study of biocultural diversity. The BCDEI curriculum expands Banks' social action approach to encompass global interactions and analysis of the interdependence of local and “far away” realities and communities, and to include service learning activities.

The process of development of biocultural diversity curriculum also affords an opportunity to explore how local education processes shape and influence who we are and the ways we contribute to the knowledge and behavior of global society. What we teach, and how we teach it, differs among education systems and communities and changes over time as societies evolve and incorporate new knowledges. The mosaic of traditional Indigenous cultures and languages around the world provides diverse philosophies that can contribute to the problem-solving skills, growth, and resilience of humanity.



Developing a biocultural approach to education also requires learning from these multiple perspectives and from Aboriginal ways of teaching and learning, such as through the involvement of Elders or experienced cultural teachers and land-based activities, and applying the lessons to both Aboriginal and non-Aboriginal education, to provide a context for learners to understand concepts within holistic worldviews. Such an approach is also crucial for knowledge exchange among communities in today's global world.

Integration of Biocultural Diversity Education in Secondary School Curricula

IN ITS INITIAL PHASE (SEE NEXT SECTION), the BCDEI focused on US standards for secondary school curricula. In the USA, all national and many state standards require discussion of both national and global native cultures. Biocultural diversity lessons can easily be integrated into existing course curricula while supporting such topics as environmental studies, social studies, geography, history, and civics. A biocultural diversity curriculum can be correlated to the national standards noted here. In Canada, education and curriculum development are the responsibility of each Province and Territory. Some of the recent initiatives taken in British Columbia to redesign curriculum, in order to reduce prescriptiveness, standardization, and knowledge fragmentation, are in line with the BCDEI philosophy, and will be explored in depth in the current phase of the project. Overall, the same general considerations apply concerning the curricular integration of biocultural diversity topics in both countries.

(For specific information on curricular integration of BCD, see the List of US National Education Standards PowerPoint [Appendix 2] and the Integration in Secondary School Curricula PowerPoint [Appendix 3].)

The biocultural diversity curriculum is geared toward grades 9-12, and is aligned with the US national education content standards for the following courses and areas of study:

- Sciences
 - o Life Science
 - o Biology
 - o Environmental Studies
- Social Studies
 - o World Cultures
 - o Global Studies
- Geography
 - o Human Geography
 - o Environmental Geography
- History
- Civics Studies
 - o Political Studies
 - o International Relations



Project Activities, 2011-2014

The BCDEI has undergone two phases so far:

During Phase 1 (2011-2012), the project team (led by Dr. Luisa Maffi, Terralingua Director, and Ed. Prof. Carla Paciotto, Western Illinois University):

- Developed the original project concept
- Identified the avenues for curricular integration according to US standards
- Developed introductory materials for teachers
- Devised a pilot curriculum project
- Produced a 10-lesson pilot curriculum module, meant as a general introduction to biocultural diversity and its relevance for human futures
- Tested the pilot in two US schools (California and Massachusetts)
- Presented some of the pilot curriculum materials in a Canadian school (Salt Spring Island, British Columbia), and at invited talks given by Dr. Maffi at the 2012 BC Teachers of English as an Additional Language (BC-TEAL) Conference in Vancouver.

Based on the experience and feedback gained in Phase 1, the team has undertaken Phase 2 of the project (2013-2014). In this phase, we have:

- Developed a broader and more comprehensive vision for and approach to the curriculum
- Produced a detailed 5-unit outline of the overall curriculum
- Initiated collaboration with experts and Indigenous and local community partners for the development of original materials (including video) for real-life case studies that are meant to form the cornerstones of the curriculum
- Undertaken new work on Unit 2 of the curriculum and the adaptation of materials from the pilot module for the purposes of Unit 1 of the curriculum
- Started building a network of teachers and educators interested in the implementation of the curriculum, for whom we intend to organize webinars to introduce the curriculum, its rationale and goals, and its relevance for youth education in the 21st century
- Started devising extension activities for students to undertake after exposure to the curriculum, in order to further engage them with the real-life significance of biocultural diversity for their lives and for the world
- Begun production of an issue of Terralingua's *Langscape* magazine (due out June 2014) devoted to exploring biocultural approaches to education, to gather world-wide perspectives of Aboriginal and non-Aboriginal educators on the philosophy of biocultural education.



4. Overview of Terralingua's Biocultural Diversity Education Curriculum

The curriculum is envisioned in 5 units, each comprised of up to 5 lessons. The table of contents of the curriculum is as follows:

BIOCULTURAL DIVERSITY CURRICULUM

INTRODUCTION AND OVERVIEW (for teachers)

UNIT 1 – *Biocultural Diversity: An Introduction*

UNIT 2 – *The Biocultural Web of Life: Language, Knowledge, and the Environment*

UNIT 3 – *Biocultural Diversity at Home: Exploring Sense of Place*

UNIT 4 – *Biocultural Diversity in the World: The Global Extinction Crisis*

UNIT 5 – *Biocultural Diversity in Action: Working for Solutions*

FINAL STUDENTS' PROJECT

CROSS-CUTTING PROJECT: *Field Journal* – a notebook/scrapbook of students' thoughts and findings, ongoing throughout the curriculum, to be integrated into the final project presentation

Overall, the curriculum aims to introduce the various dimensions (biological, cultural, linguistic) of biocultural diversity, the interactions among them at different scales (from local to global), the significance of biocultural diversity, the threats it is undergoing, and possible actions to counter the threats. Collectively, the units address the following overarching questions:

1. What is biocultural diversity?
2. Why does it matter?
3. What is happening to biocultural diversity worldwide?
4. Why are we losing biocultural diversity?
5. What can we do to counter this loss?

The lessons are complemented by extensive materials including readings, videos, charts, graphs and maps, handouts, worksheets, glossaries, and multimedia resources and links. Each unit is centered on two or more real-life case studies developed in direct collaboration with Aboriginal and non-Aboriginal partners chosen from Terralingua's global network. These collaborations result in the co-creation of authentic materials that reflect the perspectives of local people on the issues that are the focus of the case studies, and allow for productive exchanges of ideas between the partners on presentation of the materials, educational approaches, and so forth, benefiting both parties to the collaboration. The case studies offer students taking the curriculum an opportunity to learn through meaningful experience.



Xhosa student from the “Inkcubeko Nendalo” (Culture and Nature) biocultural education program.

As an example, one of the lessons in Unit 2 (which focuses on the “inextricable link” between language, knowledge, and the environment) seeks to make this link tangible to students through the example of the Xhosa people of South Africa, their language, and the traditional environmental knowledge expressed in the language. This lesson centers on an original video produced for the BCDEI by partners in South Africa. The video features Xhosa high school students enrolled in the Inkcubeko Nendalo (“Culture and Nature”) biocultural diversity education program (Dold and Cocks 2012). The video places emphasis on Xhosa traditional knowledge and relationships with the land, and on the way in which these are expressed in the Xhosa language through traditional stories, idioms, proverbs, riddles, and phrases. It also allows the Xhosa students

to share their experiences in reconnecting with their cultural and natural heritage, and to talk about the challenges and opportunities for protecting and strengthening that heritage, which is intimately related to the identity of Xhosa people. The video will also be useful for the purposes of the Inkcubeko Nendalo program.

The goal of the BCDEI curriculum is not only to foster students’ understanding and awareness of the importance of sustaining biocultural diversity for the benefit of local people and humanity at large, but also to encourage youth to engage in action from local to global scales on behalf of biocultural diversity conservation. For this purpose, the final Unit of the curriculum is conceived to provide students with inspiring examples of a multiplicity of real-life careers in biocultural diversity, again drawn from Terralingua’s global network of colleagues and collaborators.


Throughout the nearly 20 years of Terralingua activities, we have had numerous interactions with young people becoming aware of our work in the field of biocultural diversity, enriching their worldviews through it, and ultimately pursuing education and career paths molded by this experience. We anticipate that, through the BCDEI’s comprehensive approach and by working closely with interested teachers, this curriculum will provide life-changing and career-forging experiences for many more of the youth who will be exposed to it.





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6. Appendixes

- 1) Biocultural Diversity Introduction (PowerPoint)
- 2) List of US National Education Standards (PowerPoint)
- 3) Integration in Secondary School Curricula (PowerPoint)

“This diversity of solutions itself offers the most poignant lesson to be learned from a biocultural perspective: that cultural diversity is not a matter of superficial, if aesthetically pleasing, exotic flavours; it is the deep reflection of human creativity and inventiveness put to the service of enduring issues of adaptation - and increasingly of pressing issues of planetary survival.”

Luisa Maffi, Cultural Vitality, Resurgence Magazine, October 2008

7. About Terralingua

Terralingua (www.terralingua.org) is an international non-governmental organization (NGO) founded in 1996, with a mission to sustain the biocultural diversity of life — the world’s invaluable heritage of biological, cultural, and linguistic diversity — through an innovative program of research, education, policy-relevant work, and on-the-ground action.

Terralingua’s vision is that of a just, equitable, sustainable world, in which the biocultural diversity of life is valued, protected, and perpetuated for generations to come. We seek to realize this vision by bringing about a profound shift in human values through a deeper understanding and appreciation of the vital importance of biocultural diversity for the survival of all life on earth, and by fostering individual and collective action to care for biocultural diversity and sustain it in this rapidly changing world.

Terralingua works to achieve these goals by developing and deploying its expertise and insights on issues relating to biocultural diversity through research, publications, participation in international policy processes, on-the-ground work, outreach, and education.

Terralingua is a 501(c)(3) non-profit organization under U.S. tax law (#38-3291259) and a registered charity in Canada ((#85590 3266 RR0001).



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Terralingua’s Biocultural Diversity Education Initiative has been made possible by the generous support of the Berman Foundation