CURRICULUM FOR THE BIOREGION INITIATIVE

BUILDING CONCEPTS OF SUSTAINABILITY INTO UNDERGRADUATE CURRICULUM

OUR PURPOSE

Curriculum for the Bioregion, an initiative of the Washington Center for Undergraduate Education at The Evergreen State College, aims to prepare undergraduates for citizenship in a world where the complex issues of sustainability—environmental quality, community health and wellbeing, and justice and social equity—are paramount. This faculty and curriculum development initiative is based on the idea that we live our lives in specific places but the choices we make have both local and global consequences. Learning sustainability concepts and practices experientially in our local places can help us perceive larger global forces and connections and in turn, understanding global connections can inform our local understanding and actions.

OUR STRATEGY

To reach large numbers of students, the Curriculum for the Bioregion initiative works with college faculty to build place-based learning and sustainability concepts into a wide array of undergraduate courses—often creating "faculty learning communities" who work collaboratively to share curriculum and teaching approaches.

APPROACHES TO CURRICULUM IMPROVEMENT OR REFORM WITH RESPECT TO CHANGING CONTENT AND ADDRESSING PRESSING ISSUES IN SOCIETY AND THE WORLD

- **"Add-a-course"** approach. A good step! But, important topical courses are often isolated in elective status or into one disciplinary lens, e.g., sustainability just as a dimension of, or a sidebar to environmental studies.

- **Re-orientation of majors, minors, or general education curricula.** The current driver for sustainability is the development of global understandings and competence or the involvement of students in civic engagement. Rich sites for learning are, of course, freshman seminars and senior capstone experiences.

- **Interdisciplinary curricula** – Either through new, added courses, or through curricular learning communities that link or cluster 2-3 classes during a given term and enroll a common cohort of students.

- The addition of **community-based learning** or **service-learning** to existing classes, that grounds theory in practice.
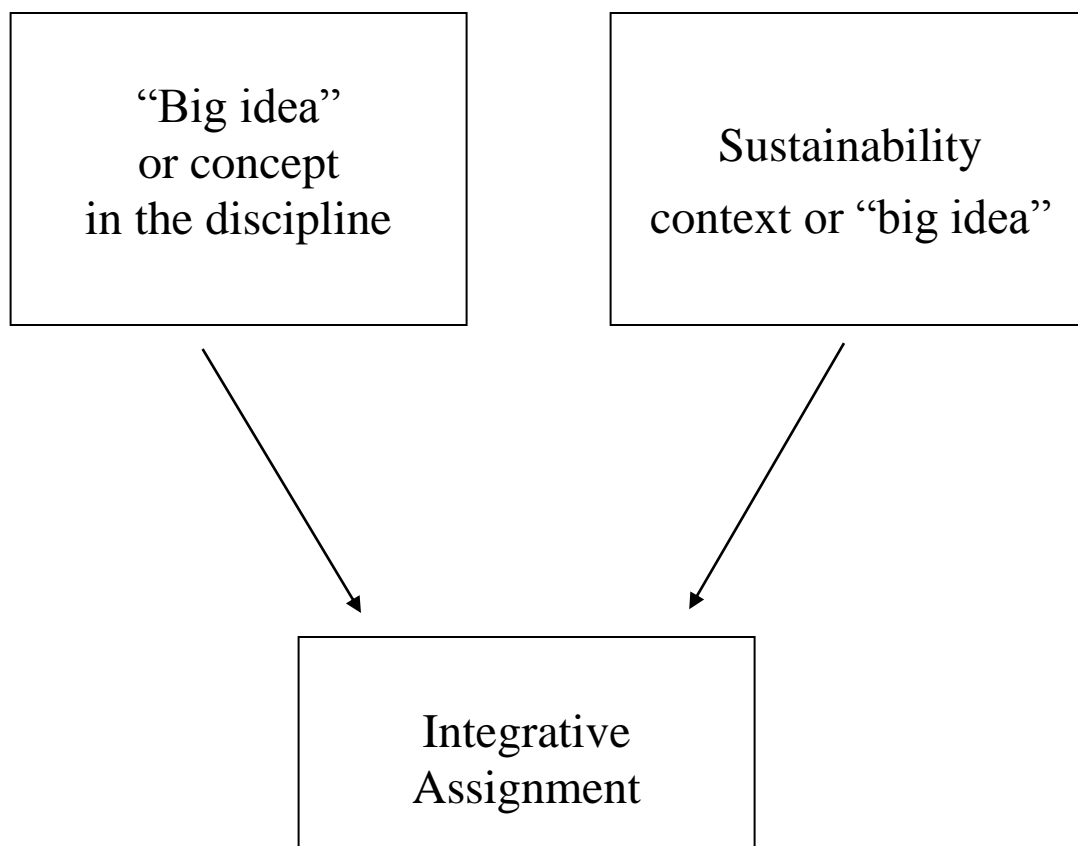
APPROACHES TO SUSTAINABILITY CURRICULUM INTEGRATION

- **Course redesign approaches:** The Association for the Advancement of Sustainability in Higher Education (AASHE) disseminates an approach that builds on the work of Geoff Chase and Peggy Barlett (and their Ponderosa and Piedmont Projects). On-campus faculty workshops stimulate and prepare faculty to build sustainability content in any course they teach—in any way they choose. On some campuses, faculty submit a revised syllabus and report on how they changed their class; often there is a financial incentive for doing this. In the case of the Piedmont Project at Emory University, a campus web-site displays the newly modified syllabi.

- **Ongoing "faculty learning communities:"** Faculty members meet over an academic term or for a year or more both to explore a new dimension in their work and to create or co-create products. Intellectual and social community is grounded in these teachers' ongoing classroom work. These communities can be both intra-institutional and inter-institutional. This is the strategy of the Curriculum for the Bioregion initiative, using…

- **The Washington Center's curriculum integration approach:** Our 26+ years of learning communities curriculum planning workshops have focused on keystone ideas and conceptual attainment related to significant learning. In our learning community work, we encourage faculty members to use this approach both for planning and for assessment of student learning as well.

- **Curriculum for the Bioregion's faculty learning communities.** Since 2007, we have convened faculty learning communities in eight disciplines. Faculty participants (20-25 in each community) work both individually and collaboratively on curriculum integration projects using the approach described on the next page.

CURRICULUM FOR THE BIOREGION INITIATIVE'S APPROACH FOR DESIGNING INTEGRATIVE SUSTAINABILITY ASSIGNMENTS[1]

In our faculty communities, we ask faculty members to begin by identifying **keystone concepts** or **"big ideas"** in a course that they teach. "Big ideas" are concepts that matter to faculty members and to the discipline. They are also concepts that are powerful enough that students can remember them, see them at work, and use them—years into the future. Then, we ask faculty to develop an integrative assignment that situates one of those "big ideas" in a sustainability context or issue, or links the disciplinary "big idea" with a "big idea" in sustainability.

Why focus on assignment development?   Because it is through assignments that students use and integrate ideas and demonstrate their understanding of these ideas. Assignments are what students often take the most seriously in a course.


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┌─────────────────────┐        ┌─────────────────────┐
│     "Big idea"      │        │    Sustainability   │
│     or concept      │        │  context or "big idea"│
│   in the discipline │        │                     │
└─────────────────────┘        └─────────────────────┘
            ↘                        ↙
              ┌─────────────────────┐
              │     Integrative     │
              │     Assignment      │
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CURRICULUM FOR THE BIOREGION
SUSTAINABILITY LEARNING OUTCOMES

SUSTAINABILITY
Sustainability involves learning to make decisions that do not undermine the environmental or social systems on which we depend. It requires a coordinated approach that involves personal lifestyles, workplace practices, and planning and policy-making that, taken together, help to foster healthy ecosystems, healthy human communities, and healthy economies.

SUSTAINABILITY CONCEPTS OR "BIG IDEAS"
These sustainability "big ideas, skills, and habits of mind" came out of a brainstorming conversation about outcomes for student learning at a Curriculum for the Bioregion conference in November 2006 on "Teaching for a Sustainable Future." In the opening session, we asked the 120 participants this question: "In an introductory course that you now teach, if you could be 100% successful at teaching one concept, one skill, and one 'habit of mind' with respect to sustainability, what would those learning outcomes be?" Later that year, an inter-institutional, interdisciplinary faculty working group sorted and honed the dozens of suggested outcomes to those presented here. Subsequently, in 2011, the "Sustainability Courses Faculty Learning Community" (a working group of 18 faculty members at 11 colleges and universities, mostly in western Washington) came together to share their courses and teaching strategies for the sustainability courses they were teaching. This group further improved this list, which capture outcomes deemed important by faculty members in diverse disciplines.

The Sustainability Courses Faculty Learning Community continues to work on this list at this website: http://faculty.washington.edu/rturner1/Sustainability/Big_Ideas01.htm

Interconnectedness, interdependence, and systems understanding
- Energy and nutrient cycles, and principles of climate and climate-change
- Biodiversity
- Ecosystem integrity, resilience, and adaptive cycles
- Nature as model/bio-mimicry
- Ecosystem services
- Carrying capacity and limits
- Complex systems theory and systems feedback
- Degraded ecosystems and "unsustainability"
- The "tragedy of the commons" as well as the "promise of the commons"
- Healthy social systems depend upon, and are intertwined with healthy economies and ecosystems
- Small actions can lead to large impacts (non-linearity and feedback loops)
- Thresholds and tipping points
- Actions in one place can affect conditions/actions elsewhere

Equity and justice
- Human rights and rights of all living things
- Environmental justice: recognizing that access to a clean, healthy environment is a right of all human beings.
- The relationships between sustainability and justice
- Basic human needs and the dimensions of social development: human needs for economic resources, food, water and sanitation, shelter, health care, energy, education, and meaningful work.

Perspectives and Paradigms
- The importance of world-views and values in relationship to sustainability
- Ethic of care (see "habits of mind" below)
- Awareness of both spatial and temporal scales
- Consideration of social and natural systems at the global, regional, and local levels
- Systems thinking in local contexts: "How does our course and the methods or questions in our discipline connect to the systems in the region in which (or about which) I and my students are learning?"
- Human/nature relationships, anthropocentrism
- Sustainability as a contentious, evolving, political, ethical, and ideological movement, as well as a lens for evaluating present and future states.

Sustainability in practice
[Choosing/measuring/portraying what matters and protecting what matters]
- "Ecological Footprint" and other indicators of human use of resources, human health, community health; (Ecological Footprint as a measurement tool as well as a strategy for reducing resource consumption.)
- Low carbon economies: carbon reduction strategies, alternative and renewable energy systems, and "climate justice" (understanding and addressing the social justice dimensions of climate change)
- Confronting and creating alternatives to over-consumption
- Accountability: public accountability of business, government, media, and non-profit sector
- Sustainable economics: the support and development of steady-state economies that support quality of life
- "Cradle to cradle" practices: (Instead of designing cradle-to-grave products dumped in landfills at the end of their 'life, cradle-to-cradle systems transforms industry by creating products whose materials are perpetually circulated in closed loops. Includes 'green building' design and life cycle assessment)
- Ecosystem and biodiversity assessment
- Ecological restoration
- Bio-mimicry: (An emerging science that studies nature's models and then imitates or takes inspiration from these designs and processes to solve human problems)
- The precautionary principle (A moral and political principle which states that where an activity raises threats to public health or the integrity of ecosystems, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who would take the action.)
- Multi-dimensional planning and problem-solving that takes into account the social, cultural, economic, and ecological dimensions of issues
- Ecological citizenship; creation of positive social change and sustainable economies
- Processes of participatory democracy
- Positive visions of the future….and the power of creative imagination

SUSTAINABILITY SKILLS
- Ability to use and apply systems thinking to issues and problems, which could also includes concept-mapping skills, modeling skills
- Ability to listen and hear with intellectual openness, outside of our usual ways of thinking
- Ability to be sensitive to cross-cultural perspectives
- Ability to work collaboratively in groups as an essential communications skill
- Ability to think laterally, "connect the dots," and synthesize information and ideas
- Ability to reflect on one's values and habits, and to recognize that one's personal choices and widespread cultural norms can affect sustainability
- Ability to translate understanding to action and commitment, using change-agent strategies

SUSTAINABILITY SKILLS (CONTINUED)

- Ability to cope with complexity by examining complex problems, hearing others' perspectives on them, and proposing alternative ways of addressing them
- Skills of observation and empiricism – observing outside our usual ways, observing deliberately
- Metacognitive thinking – examining what we know and how we know it
- Ability to practice acts of civic responsibility: taking small, practical steps, walking our talk
- Ability to recognize and evaluate an injustice, moral insight and decision-making
- Ability to reflect on knowledge, values, and commitment through a variety of media, including artistic expression
- Ability to engage in visioning processes (e.g. design charrettes)
- Ability to observe and analyze current states
- Ability to use indicators, and to conduct audits of personal footprints and resource use
- Ability to engage in interdisciplinary research
- Ability to sustaining multiple uncertainties

SUSTAINABILITY "HABITS OF MIND"

Respect for Earth's systems and interconnectedness as the nature of the world
"Cradle-to-cradle" thought and practice
Nature as model/bio-mimicry
Small actions can lead to large impacts; actions in one place can affect conditions/actions elsewhere

Respect for all living beings and the non-living world (beyond anthropocentrism)
Acknowledgement that we have a limited understanding of how things work
Acknowledgement that uncertainty is an acceptable state
Respect for humans' place in nature (both positive and negative)
Respect for the wisdom of other cultures in the world and other cultures in history

Civic consciousness in one's place
An animated knowledge of place – dynamic and sensory perception
Attachment to one's place – intuitive attachment (the often-used term, "sense of place" seems too neutral)
Sense of citizenship, civic responsibility in one's place

Shared responsibility for the future
Understanding of intergenerational responsibility
Positive vision of desirable future
Understanding of urgency, that the time to act is now
Sense that the future does not have to be same as the past

Critical hope
There is hope: no beginning is too small, no goal too large
Commitment and motivation to become personally and civically engaged
Imagination of a *collective vision* of a positive future
Power is everywhere and not limited to those higher on the social ladder

Humility
Humility about the term "sustainability" as an evolving idea
Healthy skepticism

An ethic of environmental care