Essential Elements of Sustainability Education

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Abstract: In this state of the field response, I suggest that Education for Sustainable Development (ESD) be considered a mindset that is necessary for teacher educators understand and incorporate into their daily business of educating our future teachers, regardless of grade level or content area.

Key Words: Education for Sustainable Development, Education for Sustainability, literacy, place-based, multimedia

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Learning Outcomes

Enduring Understandings/Big Ideas:
Recently, UNESCO announced that it will follow up its Decade of Education for Sustainable Development (ESD) with the implementation of the Global Action Programme (UNESCO, 2013). This Global Action Program is set to act as a continuation of implementing ESD practices beyond 2014, when the Decade of ESD will end. The overall goal of the draft Global Action Programme is "to generate and scale-up action in all levels and areas of education and learning in order to accelerate progress towards sustainable development"(UNESCO, 2013, p. 1). The Global Action Programme recognizes that educators are the most influential change agents in modeling an ESD mindset. Specifically, the Global Action Programme recommends that, "ESD is integrated into pre-service and in-service education and training for early childhood, primary and secondary school teachers, as well as teachers and facilitators in non-formal and informal education. This may start with the inclusion of ESD in specific subject areas but will ultimately lead to the integration of ESD as a cross-cutting issue" (UNESCO, 2013, p. 4).

Given the importance of Education for Sustainable Development, it must be understood as more than simply a lens through which to examine a single topic, but a distinct mindset that must inform all that we do in preparing tomorrow's teachers. What students must come away knowing, no matter what grade level or content area they are planning to teach, is that everything is connected—that our economy, our society, our culture and our environment are linked in ways that cannot be ignored, either at the classroom or the policy level. Adopting this mindset has the potential to fundamentally change the way teacher educators approach teaching as a profession, and the way classroom teachers approach their content.

Content Knowledge :
The most important and liberating feature of adopting an ESD mindset in teacher education is that no content area, no topic, is isolated or excluded. For example, in *Teaching for a Sustainable Future: A Multimedia Teacher Education Programme*, UNESCO (2010) identifies a number of global issues that can serve as curriculum foci for the exploration of ESD. Among these global issues are:
- Culture and religion for a sustainable future
- Indigenous knowledge and sustainability
- Women and sustainable development
- Population and development
- Understanding world hunger
- Sustainable agriculture
- Sustainable tourism
- Sustainable communities
- Globalization
- Climate change

Additionally, in their 2012 report entitled *The Future We Want*, UNESCO further suggests the following themes be included to secure renewed political and educational commitment for sustainable development:
- Poverty eradication
- Water and sanitation
- Energy

- Transportation
- Sustainable cities and human settlements
- Health and population
- Employment
- Oceans and seas
- Forests/desertification/biodiversity
- Sustainable consumption and production

Given such a broad range of issues and themes to consider, it becomes clear that ESD can be integrated into any grade level and any content area, from math to PE/health to language arts and beyond. Additionally, students could take any one of the above issues and themes and scale it down to the local level, encouraging cross-disciplinary study of topics that are of direct concern to students and their communities. For example, a language arts teacher might want to partner with an art or technology teacher to create public service announcements based on a specific community need. Through the act of writing, researching, editing and producing these PSAs, students would satisfy many of the Common Core State Standards associated with each content area, specifically related to reading, writing and communication. Or, perhaps the same language arts teacher would want to partner with a science, math or social studies teacher to read dystopic young adult novels (e.g. "The Hunger Games") and imagine what a post-oil, post-water earth might look like, where inhabitants are in competition for the remaining available resources. In this way, ESD necessarily invites cross-curricular interaction, which could be well suited for schools who work within a model of professional learning communities, or for any school wishing to broaden its curricular (or community) reach.

Skill Sets:

UNESCO's *ESD Toolkit* (2006) suggests that to become effective leaders in ESD, teachers must have the ability to:

- Communicate effectively
- Think about systems
- Think in time (the ability to forecast)
- Think Critically (value various issues)
- Separate quantity, quality and value
- Move from awareness to knowledge to action
- Work cooperatively
- Inquire, act, judge, imagine, connect, and value
- Develop an aesthetic response to the environment

Many of these skills have been defined as "21st Century Skills," and are also included in the Common Core State Standards, so that content area teachers will have the ability to make a smooth transition to incorporating the skills listed above into their already existing curriculum. For example, above, I suggested a cross-disciplinary project to create a public service announcement to inform community members about a topic that may be of interest—perhaps public transportation. By creating PSAs that would encourage people to take the bus (or better yet, walk or bike), students would be practicing working cooperatively, inquiring and connecting with the broader community, thinking critically about systems, moving from awareness to knowledge to action, and learning to communicate effectively. Additionally, several Common Core writing standards would be addressed, such as writing an argument, writing to inform, and the production and distribution of writing. Projects such as this would encourage the creative use of technology (another Common Core standard), and move students beyond engagement to empowerment. Perhaps their PSA could be featured on the Chamber of Commerce

website, or in other locations where the public would be able to see the finished product, building an authentic audience into the project. In this example, the big idea of sustainability as a mindset is clearly illustrated, as students can now become agents of change within their communities to create better well-being for all.

Attitudes:
Again, the UNESCO *ESD Toolkit* (2006) outlines the attitudes, or perspectives, that teachers must adopt in order to engage with/in curriculum dedicated to ESD. Some of those attitudes/perspectives include the concepts of:
- Change over time
- Connectivity
- Humans having universal attributes (wanting what's best for their children)
- Considering multiple viewpoints from multiple stakeholders
- Realizing that Technology alone will not solve all of our problems
- Individual consumer/political decisions have a global ripple effect
- The precautionary principle (taking action even if there is no definitive scientific proof)

Behaviors and Actions:

The Classroom or Educational Setting

Curriculum, Instruction and Assessment Practices Aligned With Learning Outcomes:
Miriam Webster's online dictionary defines the word "literacy" as, "knowledge that relates to a specific subject." As a literacy specialist, I am delighted to expand my own definition of literacy to incorporate sustainability literacy. First proposed by Orr (1992) as ecological literacy, Nolet (2009) has reimagined the concept as "the ability and disposition to engage in thinking, problem solving, decision making, and actions associated with achieving sustainability…it entails more than simply knowing things about the environment, economics, or equity and justice issues, but rather involves a willingness and ability to engage intellectually and personally with the tensions that are created by the interconnectedness of these systems" (p. 421). Nolet (2009) has identified nine thematic topics that would be part of a "sustainability-literate" teacher's knowledge base:
- Intergenerational perspectives
- Environmental stewardship
- Social justice and fair distribution
- Respect for limits

- Systems thinking and interdependence
- Importance of local place
- Economic alternatives
- Nature as model and teacher, and
- Global citizenship

I place a high value on the nine sustainability literate themes, and can identify many of them in my own research and practice with pre-service teachers, specifically the themes of the importance of local place, intergenerational perspectives, and social justice. Additionally, I value the importance of individual student voice/perspective. As a former middle school English/language arts teacher, this dual concept of voice/perspective is intriguing, not just in the classical rhetorical sense, but also in the practical, *whose voice is being heard/whose perspective is being represented?* sense. As a teacher educator, I encourage pre-service teachers to build lessons that put their middle and high school students at the center by allowing them to choose a topic that matters to them, and then provide the scaffolding for their students to take action.

David Sobel (2013) argues that "…place-based education teaches about both the natural and built environments. The history, folk culture, social problems, economics, and aesthetics of the community and its environment are all on the agenda. In fact, one of the core objectives is to look at how landscape, community infrastructure, watersheds, and cultural traditions all interact and shape each other" (p. 13). And he's right: the landscape shapes the culture that shapes the community.
Knowing this, I encourage students to use multi-media storytelling to give their voices and causes a platform for creating compelling, first person accounts of their own lives and communities.

For the past several years, my research has revolved around working with middle and high school students living in ecologically sensitive areas to document how climate change is affecting their lives. This is done primarily through asking students to photograph or take video of the evidence of climate change that they see near their homes. Thus, climate change provides a very compelling context within which to utilize student voice—and reading and writing and as a result, agency—within a literacy-rich framework. Students then are invited to write reflectively about the photos/videos they have collected, and compile their visuals and their thinking into a short movie documenting their individual stories. Most of the work with my "First Person Singular" project has taken place in remote Alaskan fishing villages, where students are seeing the permafrost melting beneath their feet. Recently, students have told tales of the changing migration patterns of various fish and other marine wildlife, of erosion taking place on their coastlines, and warmer, wetter winters that impede travel from village to village.

Hearing stories like these firsthand, as opposed to reading about them in scientific journals, is a powerful example of considering ESD as a mindset. With "First Person Singular," students are acting locally, thinking globally, and telling their stories from their own unique perspectives. Listening to students narrate their reactions to our changing climate could potentially do more to affect change than just about anything else. As one student told me on an early trip to Alaska, "What you do down where you live has a direct impact on us up here. We're all in this together." That, to me, is considering ESD as a mindset.

Characteristics of Authentic Engagement:

The concept of student engagement has always been at the forefront of effective teaching. However, ESD goes beyond engagement, which essentially means getting students interested in the content that teachers finds interesting and important, to *empowerment*, where teachers give students the knowledge and skills to pursue *their* interests and passions. ESD invites students to take action at a local level, and through collaboration, systems thinking and problem solving, create solutions that not only garner a high grade, but benefit the community and contribute to an overall sense of well-being.

Within the language arts, writing has always been seen as a pathway to agency. This is especially true when students are writing to authentic audiences for authentic purposes. Here, we return to the skills required of effective teachers who possess a sustainability mindset, including the ability to communicate effectively, to think in terms of systems, and to work cooperatively to advance social change (UNESCO, 2006). Such writing necessarily invites many writers into the conversation, and invites a melding of the public and the private; the community and the individual student. However, according to Matalene (2000):

> Most students quickly learn that the easiest, safest, least risky method
> is to keep private and public separate. This seems to me seriously
> wrong…we should be encouraging many voices, not turning them all
> into one. Surely, teaching students that they have the right and the
> responsibility to add their own unique voices to the American conversation
> is why we teach writing anyway. Surely, we want to strengthen their
> individual, private voices so that one day they may speak, not just listen,
> and act, not just watch. (pp. 188-9)

Matalene articulates the fundamental rationale for encouraging students to write from their experience, because such writing, "…honors their voice, encourages their efforts, and, ultimately, follows Freire's idea of praxis from reflection to action, to make better citizens" (Jacobs, 2011, p. 51). Certainly, the uniqueness of experience + place = voice. Such writing is possible through the adoption of a student-centered, place-based, sustainability mindset.

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