

Ecological Intelligence and Environmental Education: My Journey

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Abstract

Many of us are intentional in considering the environment when performing our daily tasks. But how many of us really know the true impacts of our “green” behaviors on the environment? Indeed, is it possible that engaging in green efforts can actually be counterproductive or detrimental to the environment? In his book, *Ecological Intelligence: How Knowing the Hidden Impacts of What We Buy can Change Everything*, Daniel Goleman (2009) suggests metacognition is critical to our overall ability to engage in environmental care. Yet, critically thinking about the outcomes of our actions demands that we have a strong knowledge base and a level of care or empathy sufficient for us to both gather that knowledge and then act on it. The application of ecological intelligence to environmental education is the focus of this article.

After hearing about its publication, I went out to purchase *Ecological Intelligence: How Knowing the Hidden Impacts of What We Buy can Change Everything* by Daniel Goleman (2009). As a teacher educator, I have been mindful to share his earlier works, *Emotional Intelligence* (Goleman, 2006) and *Social Intelligence* (Goleman, 2007), with students. In these publications he pluralized the definition of intelligence to include factors such as motivation and interpersonal skills. For this reason, and the fact that I had just spent a semester on sabbatical in a second-grade classroom focusing on literacy and environmental education, I was immediately drawn to this new book.

The primary purpose of my sabbatical leave was to explore the role of children’s literature as an impetus for helping children to think critically about pressing environmental issues and develop their relationship with nature. I was interested in how reading children’s literature with critical discourse might encourage them to be more empowered and efficacious to work collectively towards environmental care. I was focused on ways to sensitively and positively deepen children’s understanding of texts, themselves, and their world, and especially understanding related to the environment.

The children’s responses were revealing, insightful, and powerful. By the end of the semester, we had explored nature and environmental concerns together. We had learned a great deal about ourselves and our behaviors and views, as well as the global environment. We worked collectively to better the environment and shared personal feelings about our environmental fears. Since I was purposeful in choosing children’s books that depict nature in a way that I thought children would relate to (mostly fiction that was aesthetically pleasing and relevant to their lives), we often engaged in critical discourse and thinking. Many times this led to action, at times child-initiated and at other times initiated by me. Either way, we worked together to better our understanding of both global warming and of ways to reduce our carbon footprints. Consequently, we heightened our self-efficacy to be change agents and developed deeper relationships with nature. Numerous, specific examples of these developments, together with a summary of my work, may be found in Bouley (2009).

The intent of this article is to discuss Goleman's theory of ecological intelligence and the practicability and applicability of his theory to elementary classrooms. Goleman sent me on a journey. While reading *Ecological Intelligence* (Goleman, 2009), I began to wonder whether or not my entire semester was spent in vain. I began to question everything: Did my work actually increase the ecological intelligence of these 18 second graders? Will the environment benefit in any way from our work? Did I actually do these children and the environment a disservice? While Goleman's discussion on ecological intelligence got me thinking critically about my recent going-green efforts, by the time I had actually finished his book my feelings of having made an impact had been restored.

Ecological Intelligence

As a child, I got the idea somewhere that it was better to leave the light on for a certain period of time than to shut it off. I specifically remember thinking that every time I hit the light switch on or off it would cost my mother 5 cents. I must have decided countless times that, since I would soon return to the room, it would be better to leave the light on. I was remembering this recently when my daughter and I were discussing a "No Idling" sign. She was wondering whether it takes more fuel to shut off, and turn back on, the motor than to have it idle and, if so, how long you need to idle to use the same amount of gas it takes to restart the vehicle. Such a lack of knowledge about the impact of our actions on the environment is the focus of Goleman's (2009) *Ecological Intelligence*, in which he examines how we can collectively "become more intelligent about the ecological impacts of how we live" (p. 3). He makes the case that awareness and knowledge of the impact of one's actions on the environment is critical, yet he emphasizes collectivism and the need to "build the human store of shared ecological intelligence" (p. 3). He states that it is our knowledge, our ecological intelligence, that will "guide our decisions in better directions" (p. 3). While Goleman's focus is consumerism and knowing the carbon footprint or Life Cycle Assessment (LCA) of the items we buy, this way of thinking demands that we reflect on the impact of all of our actions. Even when we act in purposefully green ways, do we really know the impact of our actions on the environment? Goleman believes that a "fundamental disconnect resides within our awareness between what we do, and how it matters" (p. 31).

According to Goleman (2009), one demonstrates ecological intelligence when he or she actively learns about the connection between their actions and the environment and applies what has been learned to "do less harm and live sustainably" (p. 44). The ecologically intelligent being sees "the interconnections between our actions and their hidden impacts on the planet, our health, and our social system" (p. 44). Equally important to cognitive skills, says Goleman, is developing a sense of empathy and compassion for nature. Because this knowledge is immense, he calls for collectivity; a dissemination of knowledge that leads to shared empathy and collaborative action "for the greater good" (p. 49). Goleman establishes the following collective ecological rules to follow: "Know your impacts, favor improvements and share what you learn" (p. 50).

The very impetus for my research was to take a different approach to environmental education. I did not want to focus on the popular topics such as the 3 R's (reduce, reuse, recycle), polar bears, or animal extinction and rain forest depletion. I wanted to take a deeper approach and help children to develop a love for nature and a deep connection to the environment while understanding the consequences of their everyday actions. I had hoped to do this by tapping into children's keen sense of empathy, compassion, and fairness (which has been discussed so often as the basis of multicultural education) as an effective way for children to truly understand the term environmental care. I wanted to avoid exactly what Goleman (2009) sights as a hindrance; the false sense that we are doing enough when we are engaging in action that's only green in

appearance. In other words, thinking we are doing some good when in actuality we are not. Goleman suggests that we do not know the impacts of what we do and buy and, what is worse, that we don't know that we don't know. As he says: "Failing to know what we do not notice is the essence of self-deception" (p. 30). One way in which he demonstrates this is by looking at an area that is growing in popularity as a green act; buying local foods. Goleman makes us question whether local is even local at all as he tracks a "local" tomato in Quebec back to France, where the research and development associated with it was conducted, to China, where the seeds were grown, and back to France, where they were treated and shipped to Ontario to be sprouted, before the seedbeds were finally trucked to Quebec to be cultivated and harvested and labeled local. Everything has a Life Cycle Assessment (LCA) and we must learn to look beyond the label, learn more, favor changes, and inform others.

Cognition: Life Cycle Assessment (LCA) Awareness and Metacognition

While reading *Ecological Intelligence* (Goleman, 2009) I began to think differently about everything I did. Most often these thoughts involved a sense of doubt that my environmental actions served a purpose. During these times I realized that my ecological intelligence was lacking in many ways. At times this even led to a period of panic. One day I was on my usual run when this panic set in. I'm not sure if it was a truck or a bus or a series of cars that sent out the fumes that choked me, literally and figuratively. What if this act of running, something that is healthy and good for me, isn't good at all? Or worse, maybe my regular runs outdoors are counterproductive to my health. How much emission gas do I inhale while running on these streets? Do the benefits of running outweigh the harm of breathing in pollution? Exactly how much pollution do I breathe in on a single run? I didn't know. I simply didn't have the ecological intelligence, but what I did have was a higher level of consciousness that made me question the hidden consequences of my actions. In my panic I opened Goleman's book and read about something called Disability Adjusted Life Years (DALY) that "measures the amount of healthy life lost due to impacts from particulate emissions, toxins, etc." (p. 63). I knew it was up to me to do some research on emission absorption while running (know your impacts), make necessary changes (favor improvements), and share what I learned with other runners (share what you know).

It is this level of consciousness that I wanted the children to have, and after reading this I began questioning whether or not this was something we achieved at all. As I scanned over the semester I was flooded with examples of how we researched product origins and thought critically about the potential effects of our actions. I remember one young boy discussing the school's recent efforts to get children to walk to school. He said that while it was good they were walking to school, there was no difference in the distance the buses ran as they stayed on the same routes to pick up children who didn't walk. He suggested that they should sign up for those days so the buses would know how to change their routes and save in pollution. I suggested he share his thinking with the Principal. This is a great example of how easy it is to feel good about something (walking to school) when it actually has no favorable impact to the environment (although it does get children outdoors and exercising). It is easy to see how using Goleman's suggested model of know your impact (how much bus pollution can we save), make necessary changes (change the bus routes to accommodate for walkers), and inform others (share with the Principal, bus services, families, etc.) can lead towards collectivity and powerful change. On another day, and when discussing how far products travel before we purchase them, an insightful girl just got up from my group, walked over to get the globe, tracked the trip of a product from China to her home, and started estimating mileage. She walked around the room with the globe showing everyone and suggested that we use string to show the trip's distance. She later told her parents that they should

be careful to buy only products labeled “Made in the USA.” Not stopping at that, she suggested we buy fewer products and only buy things we absolutely need. This started a trend of children looking around their houses for items that they could recycle to make other items, for either simple fun or useful purposes. At this time I introduced the readings of various books that could help the children to discuss and further act on this new feeling of compassionate consumerism. During readings of *The Lorax* (Dr. Seuss, 1971) and *The Gift of Nothing* (McDonnell, 2009) the children engaged in critical discourse regarding the environmental impacts of consumerism and were able to apply the author’s message to their own lives by thinking about, and listing, things they needed and things they did not.

These were great examples of children thinking about their ecological knowledge and actions (metacognition) and developing the basic awareness of life cycle assessments; that everything has a carbon footprint. Further, children demonstrated they understood collective action by the consistent sharing of what they learned. As they were developing the ability to see and share the interconnectedness between human activity and the flow of nature and make the necessary changes, they were becoming more ecologically intelligent. I realized that my fear of actually being counter-productive, causing the children to have an inflated and/or uneducated view of the impact of their actions, was unfounded. I believe we focused more on thinking beyond our actions than simply engaging in apparent go-green behavior. In fact, I once brought in a card with a picture of a polar bear and the saying “Everything is Connected.” When I asked the children what this meant they said, in unspecific but clear terms, that everything we buy, eat, or use has created pollution somewhere and this affects everything; even the polar bear. Goleman cites Gregory Norris’s reminder that everything is connected and his warning that “every product’s life cycle is linked to the release of at least trace quantities of pollutants somewhere far back in the supply chain” (p. 64). This reminds us that, even if something says it is a green product, it still contributes to pollution. Goleman suggests that as we learn more about products’ LCA we will be entering an era he calls “radical transparency” (p. 6). This new knowledge will impact how we shop, which in turn will dictate how products are made, all ultimately leading to positive change. These children were insightful in their thinking and on their way into this radical transparency era. Interestingly, the children also seemed to exhibit a natural desire to share what they had learned. Whenever an issue of environmental concern arose, the children would share with each other, their families, other classrooms, and beyond as they wrote numerous letters to companies, restaurants, politicians, and President Obama. They demanded to be heard and clearly saw the urgency in sharing their new information, as well as its potential to facilitate the necessary change.

I was able to make many other connections between Goleman’s work and my own. I soon realized that he provided the language and rules of thinking, or protocol, for doing what I had started. So often when reading his book, my sabbatical experience came to mind. After reading *Ecological Intelligence* my first concern was whether or not I helped the children to think and know about life cycle assessments and be sufficiently informed to accurately know the impact of their actions. A second major connection I made had to do with the notion that empathy plays a critical role in environmental education, action, and care. This has always been evident and a concern to me as I set out to accomplish my goals. My objective was to cradle children’s natural sense of empathy and use it to empower them rather than disempower by filling them with sadness and fear.

Empathy: Interactions and Feelings

While the cognitive abilities to identify, understand, and problem-solve the interconnectedness between human activity and nature is an important aspect of being ecologically intelligent,

ecological intelligence must “meld these cognitive skills with empathy for all of life” (Goleman, 2009, p. 44). In his earlier works, Goleman (2006, 2007) suggests that, in addition to cognitive intelligence, people must develop their emotional intelligence and their social intelligence, respectively, as this would allow them to better understand the perspectives of others and demonstrate motivation, empathy, and compassion. Howard Gardner (2006) also pluralizes intelligence and suggests that there are numerous forms of intelligence that, depending on one’s life experiences, can become strengths or weaknesses. Gardner suggests that those who develop a positive sense of nature have an ability to connect with nature and a deep sense of empathy for the earth; a naturalistic intelligence. Goleman (2009) sees this as a necessity to ecological intelligence and writes: “We display such empathy whenever we feel distress at a sign of the ‘pain’ of the planet or resolve to make things better.” (p. 44).

Upon entering my research I was explicit in my intention to help children tap into their sense of empathy and use it as a motivator to be change agents. Since children are too often disconnected from the environment, I expected to see what Richard Louv (2005) calls nature deficit disorder, which involves “the human costs of alienation from nature” (p. 34). These children had limited regular interactions with nature. They often reported not having a favorite place outside to play and instead stated indoor activities as being typical. In fact, some children stated that they either do not like, or are not allowed to go, outside. Clearly, increasing children’s connection to nature would be important in establishing empathy towards environmental care. We must facilitate this personal relationship with nature as “we no longer can rely on our astute attunement to our natural world nor the passing on through generations of the local wisdom that lets native peoples find ways to live in harmony with their patch of the planet” (Goleman, 2009, p. 45).

Interestingly enough, children’s literature played a big role in heightening children’s awareness of different aspects of nature. For example, after enjoying a reading of Patricia MacLachlan’s (1994) book *All the Places to Love*, in which the characters go to, and share, their favorite places to love outdoors in a beautiful poetic prose, we went outside with science observation journals to investigate and get to know nature. The connections that children made between nature in the book and the nature they were experiencing were powerful. The book reading seemed to make the children keenly aware of the sights, sounds, and smells of nature. What I quickly learned as these children became aware of, and interested in, the natural world around them was they were equally aware and deeply concerned with the state of the environment. These children clearly felt “distressed at the ‘pain’ of the planet” and had an incredibly strong “resolve to make things better” (Goleman, 2009, p. 44).

I also learned that their emotional responses needed an audience, that they needed to talk about these feelings of concern, and that they needed help to focus these emotions. This was exactly what I set out to do. If left unattended, these observations and concerns could eventually lead to a sense of disempowerment and disconnect. Often times we discuss big issues with children but don’t allow for the time to bring their feelings full circle. For instance, when we were out we saw a tremendous amount of garbage in the woods. The children were immediately perplexed as to why someone would throw garbage there. They needed to share their feelings, to have time to talk about their concerns. They then needed to take action, to organize picking it up. They decided next that it would be important to let other people know why we should not litter and make an appeal to people to stop such behavior. To me, asking children to notice the garbage but then not give them the space and time to move through this process could be disempowering, in the least.

These were all important steps in developing ecological intelligence, and their deep feelings of empathy motivated them to become change agents. These children set out to work together

towards the greater good (in fact, they gave up their recess time to do so). They understood the importance, and principles, of collective action. Most importantly, they believed their actions could make a difference. These children already knew what Colin Beavan (2009) learned after spending a year attempting to “save the planet.” He concluded that while we must pay more attention to educating ourselves on the state of the earth and the impact of our actions, before we do we have to actually believe that we can make a difference. Beavan states: “That, by the way, is one of the most important results of the project: that I’ve come to believe that I can make a difference” (p. 223). A second conclusion he made is that changing the people around him was the “unforeseen consequence of individual action” (p. 224) and it is by changing ourselves and sharing what we know that “we can change the people around us” (p. 224). These children already seemed to understand these concepts of self-efficacy and collectivity that took Beavan a long, hard year to discover or confirm.

Conclusion

The notion of radical transparency implies that we are given a great amount of data based on scientific findings that can help us to know what is safe and to make wise decisions as consumers (Goleman, 2009). It is Goleman’s perspective that “what eventually may become a learned emotional reaction must begin with intellectual comprehension” (p. 47). The students in this second-grade classroom are well on their way to building, sharing, and acting on this knowledge. We all need to become better researchers and trace the history, or LCA, of the products we buy and be diligent in finding ways to share this information. We, like these children, have to engage in this on-going process to be compassionate and smart consumers and to engage in activities that have the least negative impact on our environment. If Goleman is correct, as our store of information grows so will our emotional response, and personally, I have found this to be true. If nothing else, what I have learned from these young children is the power of caring, of empathy, and of compassion. Vivian Paley, an early childhood educator/writer once said: “The role of the teacher is to be nice; to set the model for niceness; to be nice to all children all the time. This allows children to take the risk of being nice themselves” (Bullard, Carnes, Hofer, Polk, & Hernandez Sheets, 1997). I wonder; if it is a risk to be nice to each other, is it an even greater risk to be nice to the earth? Yet, I know firsthand that even very young children understand what is, and what is not, fair. They understand social justice and they feel empathy. Children can, and should, be a model for us. Let us allow this to be the motivation to increase our ecological intelligence, move into the era of radical transparency, and use consumer power to change our relationship to our planet. We don’t have to be drastic and strive to obtain “no impact” status, but we do need to act soon, as Goleman suggests: “A boost in ecological intelligence seems essential for our species to adapt to the singular challenges of these times” (p. 246). Yes, time is of the essence. Let’s not only be deliberate in sharing all that we know with the children in our lives, but listen to them carefully as it appears they are emotionally wise, intellectually capable, and highly motivated to work together towards change.

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