Bentley, M.L. (2014). Introduction: Preparing the Next Generations to Face the Future. In M.L. Bentley, M. Mueller & B. Martin. (Eds.). *Connecting Children: Ideas and Activities for Parents and Educators* (pp. 2-16). Bethany, Oklahoma: Wood 'N' Barnes.

• CHAPTER ONE •

Introduction: Preparing the Millennials and Generation Z to Face the Future

Que sera sera

Whatever will be will be

The future's not ours to see

Que sera sera

— Doris Day, 1956, in Alfred Hitchcock's *The Man Who Knew Too Much*.

These early years of the 21st century are full of ecological and political uncertainties. We've had ample warning from scientists about the negative changes in the state of the earth, but as Chet Bowers (2012) points out, most Americans share deep and unwarranted cultural assumptions and remain uninformed about environmental limits and the potential for the social disarray that could result from such potential big disruptions as global climate change, loss of biodiversity, population growth, systemic economic changes, and the ruin of life-sustaining ecosystems. Such issues as these are mostly ignored in our schools whose curriculum is held hostage by failed national and state education policies that followed the faulty analysis presented in *A Nation at Risk* (National Commission on Excellence in Education, 1983) and other reports of that period whose premise was that our internatioanl economic competivive edge would be lost unless we "fixed" our schools with more academic rigor and test-based accountability.

Que sera sera is a truism – whatever will be will be. The future is not ours to see. Well, maybe not, but maybe we can predict based upon trends. Nature, we now know, is ultimately a dynamic, interconnected, chaotic and only somewhat predictable system, as Edward Lorentz discovered in 1963 when studying one subset, the atmosphere. Humankind cannot count on engineer-

ing itself a safe and secure future. Yet we have reached a point in our evolution that we know that our actions can have a profound effect on the planetary ecosystems that sustain us, and we know that most of those effects so far do not positivily foster our well being.

We also know we can change our ways. We have already begun to do so, both on personal and governmental levels. For example, many Americans are now recycling, and that was certainly not the case when I was growing up. One of the positive actions of President Obama's administration was to stiffen the corporate average fuel economy (CAFE) and green house gas (GHG) emission rules for automobile fuel efficiency. As a result manufacturers have begun to put more efficient vehicles on the road. In 2011 the standard was increased again from a target of 35.5 mpg in 2016 to 54.5 mpg by 2025. The Obama administration has sought to move national energy policy toward more use of renewables. So at least in some respects, we are changing in the right direction. But the pace of change may not be enough. If, for example, the atmosphere is going to once again host no more than 350 parts per million of carbon dioxide (the 1986 portion), then we will need to do more, both on a personal level, such as, for example, becoming more vegetarian, and in making more changes to national and international energy policies. The goal should be to leave the future generations an ecologically healthy world in which to live.

The Millennials and Generation Z

The Millennials (a.k.a. the Net Generation, Generation We, Generation Y, Generation Sell, Generation Next, and the Echo Boomers) are the demographic unit following Generation X ("Gen X"), which in turn followed the World War II Baby Boomers, of which this writer was among. The literature lists various dates for when the Millennials began and ended but typically the range is given as from the early 1980s to about 2002. The term *Echo Boomers* refers to the fact that many of them are children of baby boomers. My wife, also a boomer, and I reared three of them. The up-and-coming, still-in-grades school generation has been variously dubbed Generation Z ("Gen Z"), or the Homelanders. They began about the time the U.S. created the Department of Homeland Security. They are the first generation born in the 21st century, also have been called Generation Net or "iGen". These kids have never known a world without the Internet or cellular phones. Of course, you will see different names and date ranges for all these generations.

Our oldest Millennial is now 23 and our youngest 16. As they have grown up issues like environmental pollution, loss of biodiversity, exponential population growth, and climate change have been part of the public discourse. During family dinnertime and on other occasions we have talked about these

issues, but our kids rarely reported having them discussed in their science or social studies classrooms at school. Both the science and the social justice aspects of the issues were part of our family discussions, but my wife and I avoided a doom-and-gloom demeanor and focused on what possible actions and solutions might be.

As parents, we wanted to avoid an approach that would make our children depressed about their future and that of our planet. So instead of lamenting the state of things, we focused on responses and activities to enhance our children's naturalist intelligence and critical consciousness, providing lots of opportunities for exploring in nature and always building on their experiences (Larkin, 2011). This so-called "naturalist intelligence" is the last of eight forms of intelligence identified by Harvard psychologist Howard Gardner (1999), who described it as the intelligence that "enables human beings to recognize, categorize, and draw upon certain features of the environment" (p. 48). Gardner's work implies that the ideas and experiences of youth are a starting point for developing this intelligence.

A naturalist intelligence is about being aware of the environment and its features, being keen in observing, having an inquiring interest in the natural surroundings, and possessing a developmentally-appropriate understanding the natural environment. Children who demonstrate a high degree of naturalistic intelligence are "nature smart". They take notice of the life around them and enjoy activities in the out-of-doors. As observers, they have a sharp eye for detail and are able to analyze, classify and recognize patterns in nature. They tend to have a nurturing tendency and a strong connection to other living things, whether plants or animals. They are usually interested in exploring their surroundings and learning about other species and they display a sensitive attentiveness to and concern for the environment.

As parents, we encouraged the development of our children's naturalist intelligence and also their critical consciousness, what Brazilian educator and philosopher Paulo Freire (1970) called *conscientization*. By conscientization Freire meant a process of knowing through which one is able to critically consider the culture that has shaped oneself and, following reflection, to act positively to affect change. We wanted our children to grow up as part of the solution and not part of the problem, to become informed and engaged citizens who understand how to pursue their own happiness and wellbeing while also contributing to a more just and sustainable society for everyone else. Time will tell if we succeeded or not but all the signs so far are positive.

The significance of childhood experiences

It is well known that childhood experiences are significant factors influencing later beliefs and activities, including, for example voting and participating in

conservation and environmental protection actions (Cohen & Warner, 2009). Researchers tell us, and our experience as parents and educators affirms, that children form values and priorities early and that these values persist (Wilson, 1994, 1996). Sobel (1996) argues that expanding children's empathy with the natural world should be the principal aim for ages four through seven. Other researches have found that children's positive encounters with nature can lead to development of an environmental ethic (Palmberg & Kuru, 2000).

Richard Louv coined the term "nature deficit distorder" (which is not a medically established malady) in his 2005 book, *Last child in the woods*, which was revised and republished in 2008. The book was widely hailed for calling attention to the situation of the increasingly more sedentary and screen-bound lifestyles of children and youth. In his latest book, *The Nature Principle* (Algonquin, 2011), Louv describes the curative power of nature, how it engages our mind and our senses and how it influences our physical, psychological, and spiritual wellbeing, even our relationships. He claims that the more our society becomes captivated by new technologies, the more we will need to be connected to nature for our own well-being.

In our own family of five, we provide our three children access to a computer at home, necessary these days for their school work. Needless to say they discovered the attraction of social networking, YouTube, and surfing the net for entertainment. But my wife and I monitored and put limits on their "screen time" (and we never allowed them to have video game devices, Xbox, Wii, Gameboy, etc., although they had exposure to them when visiting with their friends). After all our children were in school for the full-day, both my wife and I worked outside the home but we were lucky to be in professions that allowed flexible work schedules. This enabled us to spent a generous amount of "quality time" with our kids, and we prioritiezed sharing time in the outdoors. We all loved taking bike rides through the nature preserves when we lived in Chicago, and after moving to Virginia, taking weekend family hikes and camping out in the state parks, Nature Conservancy properties, and national forests, and, when the kids were older, paddling the white water of the nearby James and New Rivers. We were ever conscious of sharing "nature finds" and encouraging our children's curiosity with appropriate quesitons and responses. This kind of attention, I believe, went far to enhance our children's naturalist intelligence. They had lots of experiences of landscapes and waterscapes, many different kinds of natural areas that we explored walking, biking, and paddling.

We were also fortunate to be able to send each of our children to church camp every summer, the kind of church camp that helped them connect their experience of nature to their developing morality and spirituality. Their positive experiences during the annual two weeks of camp made us big believers in these institutions. Our two older children went on to become camp counse-

lors and are now positive role models for many other children. Of course, there are secular, non-religious summer camps that also foster similar "green" values.

Our children also had the development of their naturalist intelligence supported by the pK-8 school that they attended until grade 8. Community School in Roanoke, VA (www.communityschool.net) was founded in 1970 during a period of cultural ferment in the country when many communities experimented with alternative educational models (in fact, George Ambrose, a colleague and chapter author in this book and I proposed a model ourselves, and the grant to create it was nearly funded [Bentley & Ambrose, 1972]). Community School, like many schools of the period, distinguished itself from the typical public school of the day as being more "child-centered". Community School's stated aim is to educate "children of all racial, cultural, religious, and economic backgrounds based on a child-centered philosophy that is committed to teaching children in the ways they learn best" (Community School, 2000). The school always has had a very diverse student body made possible by a generous scholarship program that even our family was a beneficiary of, at least until my wife took a full-time position. Our experience over many years was that Community School provided an appropriate curriculum and lived up to its claim, as teachers respected each child and moved them along academic and social growth points at their own pace. This was accomplished without tests and grades through student goal-setting and periodic child-parent-teacher accountability conferences.

Community School's staff and teachers recognize the importance of enjoyment in learning. A major component of the daily and weekly schedule was free play outdoors (the site is a large property with fields, a stream and woods as well as a large playground with traditional play equipment). The middle grades curriculum featured "Friday Groups" a choice of four or more learning opportunities for mixed-age groups, one or more activity of which was outdoors. Most of Friday was devoted to the Group studies or projects. When asked, my 16-year old son remembered many of his Friday Groups, his favorite being fort building in the woods, but he also remembered analyzing an Alfred Hitchcock movie, doing community service projects such a picking up litter and tree planting, and, of course, taking various hikes and exploring natural areas, such as the nearby Woodpecker Ridge Nature Center and the even closer Appalachian Trail.

Our family was fortunate to have the resources to provide the annual summer church camp and a private school education for our children. But deciding this to be a family priority was a difficult choice for me in particular, for, after all, I was a public school teacher for nearly a decade and have been a life-long advocate of public schools. The short explanation: When our oldest, Sarah, entered school during our Chicago years, we were delighted to be able

to take advantage of free tuition for faculty children at my university's pK-5 lab school, a school that had evolved in the Deweyan tradition. She thrived there. When our family relocated to Virginia, my wife and I chose to live in a community with highly regarded schools. We enrolled Sarah in second grade but after two weeks of her crying on coming home every day we decided we had to withdraw her. Sarah was not accustomed to sitting in desks in rows for long lectures and being required to take notes from the board. She couldn't finish copying before the board was erased for the next round of notes. Nothing like that kind of instruction took place in her Chicago lab school classroom. But she became a happy learner again at Community School and it just made sense to us for her brothers to follow her. To us, it was worth the financial sacrifice.

Sarah's difficulty in the public school led us to have her tested at the University of Virginia's Kluge Rehabilitation Center in Charlottesville. She was diagnosed with specific learning disabilities related to reading. Because Community School limited class sizes to 14, her teachers were able to differentiate and pace instruction so that she could succeed. We also followed Kluge's recommendation to provide twice-weekly tutoring. Sarah was motivated to learn despite her struggle with reading. I am happy to report that she graduated from college in 2012 with a GPA of 3.89 and earned the departmental award for excellence in psychology as well as the Algernon Sydney Sullivan Award for community service.

My wife Susan is an Episcopal priest and I am now mostly retired from academia – neither of us have had lucrative jobs. So our decision to educate our children as we did was the result of much deliberation. Ultimately we both agreed that our highest priority should be to first provide for our children a solid foundation of elementary education (primary education in other counties). Looking back, I don't regret that decision and we'd both do it again. All these choices fostered our children's the naturalist intelligence and conscientization.

The well-known biologist, E.O. Wilson (1984) coined the term, *biophilia*, arguing that this love of living things is an almost inherent urge within all of us, an in-born tendency to appreciate and affiliate with other life forms. But of course, such an urge needs stimulation and reinforcement to develop. If children's natural affinity for nature is not given opportunities to develop when they are young, then perhaps indifference or even *biophobia* - an aversion to nature, may result. Biophobia also is a disregard of nature as nothing more than a resource for exploitation. Sadly, there is a strand of biophobia in popular 21st century culture and it is an obstacle to preparing the Millennials and Generation Z for the future.

And so, what about the Millennials' future?

The foreseeable future, let's say to around 2050 C.E. or so, does not look all that promising for today's youth who will be middle aged by then and parents themselves. Scientists have long been warning that if trends such as population growth, increasing pollution and acidification of the oceans, loss of biodiversity, and climate change among others, are not addressed more aggressively, that further degradation of life-sustaining ecosystems will be likely. So it seems a reasonable assumption that the world will be a different place in 2050, and not so healthy (Harte, 2007; Millennium Ecosystem Assessment, 2005).

Thus I believe that parents and educators need to become more aware not only of the ecological perils ahead but also how to help our children and youth develop an attachment to and love of nature and to develop their critical thinking abilities in order to know, as citizens in a democratic society, when and how to act to ameliorate whatever condidtions that are amenable to their influence.

While I'm not trained as a meteorologist or climatologist, I've studied these sciences and have addressed climate change in some of the courses I've taught. I'm convinced that most of the world's climate scientists are correct, that the changes underway are human-caused. I believe that if we are not on a radically different energy path by the end of this decade, the Millennials and Gen Z – not to mention many non-human creatures – are in for a lot of suffering. Naomi Klein (2011) sums up the situation:

> But it is not just the atmosphere that we have exploited beyond its capacity to recover—we are doing the same to the oceans, to freshwater, to topsoil and to biodiversity. The expansionist, extractive mindset, which has so long governed our relationship to nature, is what the climate crisis calls into question so fundamentally. The abundance of scientific research showing we have pushed nature beyond its limits does not just demand green products and market-based solutions; it demands a new civilizational paradigm, one grounded not in dominance over nature but in respect for natural cycles of renewal—and acutely sensitive to natural limits, including the limits of human intelligence.

We affluent Westerners need to consider serious life-style changes if things are going to be reversed to attain the goal of 350 parts per million carbon dioxide in the atmosphere. There are positive signs like the CAFE standards and introduction of electric vehicles. Solar technologies are improving and solar products are getting cheaper, which will help, as will more wind power, a technology that also is getting better. I'm still not a proponent of nuclear power because nuclear waste is still a huge problem with no solution in sight. Of course if the carbon dioxide and other by-products of fossil fuel combustion were to be sequestered, which is expensive, we could continue

with generating electricity in the traditional way. There is one coal plant that does sequester CO_2 underground now.

The skeptics and climate change deniers fear the economic changes required to transition to a sustainable society. They defend a do-nothing position by claiming that the Earth has had warmer periods in the past. It is true that there have been periods in the past where average global temperatures were higher than they are now, but we weren't around then and none of those hot times were caused by us. The concentration of CO_2 is now known accurately for the past 650,000 years from Antarctic ice cores. CO_2 concentrations have been as low as 180 ppm during glacial periods and a high of 300 ppm during warm interglacials. Over the past century, it increased rapidly well out of this range, and as of this writing is 395 ppm (NOAA, 2012). To those who would do nothing, I argue that we should heed the *precautionary principal*, which states that "When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" (Science and Environmental Health Network, 1998).

Undeniably, some organisms will survive no matter how degraded our planetary environments become, and I realize that with the recent accumulation of evidence of the abundance of extrasolar planets that life is very likely to exist elsewhere in the universe, even intelligent life, so that closure here isn't an ultimate dead end. Yet what drives my passion for addressing environmental and child rearing issues is that I hate the thought that my children and their children – our collective children for generations to come - will have to live in a less lively world. I hate the thought that earth is becoming a less diverse world ecologically, a world of scarcity and suffering, which might not be all that far off in the future at the rate of change scientists are now witnessing and recording. I believe future historians will condemn our generation for knowing what we were doing to our life-sustaining enviornments, and then not changing our ways.

About how children and adolescents learn

So, I turn back now to the focus of this chapter: preparing Millennials and Gen Zs to meet the challenges of life on a warmer Earth with many more people and much less biodiversity. How do we parents and teachers go about fostering conscientization, as well as the development of the naturalist intelligence that each person has in some degree? Reading the other chapters in this book will help answer this question. Remembering our own growing up might be useful too, and we can turn to science as well.

Over the past several decades researchers in neuroscience, psychology, and education have gained more understanding about learning and development.

Of course, in any setting, the learner is the most important element in teaching and learning, and, as psychologist David Ausubel (1968) pointed out long ago, what the learner brings to the table is the single most important factor involved in what he or she will learn. Many of us also have come to recognize that more than a decade of one-size-fits-all No Child Left Behind test-driven educational "reforms" have not done much if anything to advance our students' achievement, and certainly not their critical thinking/conscientization or their naturalist intelligence.

As parents and educators we need to investigate and be willing to try alternative models and strategies for educating children and youth so that our Millennials and those who follow them will be prepared to participate in and promote a durable democracy and an economy that is ecologically sustainable. Corporatist-style education has now been tried and found wanting. The gains that were predicted didn't happen. ACT and SAT and other such measures remain flat. One thing we know now for sure: when it comes to educating children, *one size does not fit all*. Children of the same age vary greatly in cognitive skills and knowledge, social skills and behaviors, and physical and motor skills (Bowman, Donovan, & Burns, 2001). Any rank ordering of children in any area of abilities or knowledge will be different if taken at another time, and researchers have found that the ordering changes more with time (Shonkoff & Phillips, 2000). Further, we now know how important metacognition is in learning.

But while we must always recognize each child as an individual, researchers generally agree that children and adolescents move through discernable patterns of development. Young children characteristically are social beings who tend to become more autonomous with age, and that they seek to understand the world around them. That is, young children are meaning-makers and theory-builders, which requires physical knowledge, or experience with real-world objects and phenomena. Thus, young children should be engaged not only mentally but physically in investigating and handling components in their environment (Chaille & Britain, 2003).

As for later learners of middle and early high school age (10- to 15-year-olds), young adolescence is a time of rapid and significant developmental change, with the onset of puberty being among the most prominent. They need educational programs that fit their age group because they are unique in terms of development. Adolescents are still developing their identities as they transition to maturity, physically, socially, emotionally and intellectually. They are physically active and have a lot of energy. Their confidence in themselves fluctuates a lot as they are concerned with being liked and are more oriented toward their peer group rather than their parents and adults. Intellectually, many are still concrete learners but most are becoming more capable of abstract reasoning, like challenges, and can meet high expectations.

Adolescents' organizational skills are often underdeveloped and they may jump from one thing to another as they begin developing special interests. Parents and teachers should be aware that this is a most impressionable age, a period when youth are forming values and making choices that will influence the rest of their lives. Typically young adolescents learn most through interacting with adults and peers, through *doing* rather than by listening (National Middle School Association, 2003).

We know now that the human brain does not fully mature until 18 years of age or later (Wilson and Horch, 2002). Thus, while the brain continues to develop throughout the 16-19 years, many older adolescent's possess mature bodies, especially girls, though some, especially boys, don't complete puberty until the later teen years. Typical teenagers have acne, body hair growth, and for boys, facial hair growth and voices change. They are more interested than youger teens in co-educational activities and are developing community consciousness. Peer groups tend to form among teens of similar socio-economic status.

Older adolescents are ever more able to "think about their thinking" (meta-cognition) and thus are more aware about how others critique them. This growing self-awareness makes adolescents more multifaceted youngsters than children and early teens: their "motivational profile" is complex, with wide differences in motivation to learn. Also, teens at this stage tend to be focused on the present and not so much on the future. (Papalia, Olds, & Feldman, 2008)

Adults and teachers who want to reach children and youth should be prepared to demonstrate respect for them by creating an accepting environment. Older teens will especially appreciate your respectful attitude and your willingness to negotiate with them so that they know you are interested in their needs (and not just interested in your own goal to get them from point A to point B). Most young people are fair and really do want an adult to guide and share their understandings with them.

Conclusion

This book began as a Special Edition on the Website, Education.com, published in 2009, a project in response to Louv's *Last child in the woods*. Our own book's value, however, does not depend on accepting Louv's diagnosis, nor does it depend on believing in a dire future for our children due to ecological trends and the condition of our planet. Nevertheless, the chapter authors of this book do address the well-documented situation that children today are getting much less exposure to natural environments than their peers of past generations. Louv's book makes a good case for this, but I wold add that a more recent and thorough study published in the *Archives of Pediatric*

and Adolescent Medicine in 2011 found that half the preschoolers in a sample of some 4 million children did not have even one parent-supervised outdoor play opportunity per day (Tandon, Zhou, & Christakis, 2011). So, I'm convinced that this is a widespread situation of deprivation that will will not help us foster the naturalist intelligence of the Millennials' and those after them.

The chapter writers of *Developing Environmental Awareness* hail from a variety of backgrounds in formal and informal education and present both suggestions for parents and recommendations for teachers about how to use neighborhood and local outdoor resources to enhance the naturalist intelligence and conscientization of children and youth, and build upon their experiences of nature. Some chapters are addressed to parents and others to teachers, and some to both. Chapters focus on age groups from preschool children to high school-aged adolescents. A few chapters address the theoretical underpinnings for the educational-cultural changes we would like to see. Chapter topics include, "Young Naturalists at Night", "Overcoming 'Critter Aversion'", "Star Hopping: Naked-eye Astronomy", "Fostering a Baby's Love for Nature", "Using Guided Nature Awareness Meditation", "Rocks Rock: In Your Hand and Under Your Feet", "Engaging Children with Nature through Historical Re-enactment", "Learning from a Multicultural School Garden", and "After School Nature Clubs". Many chapters suggests tools, books and other media and online links to additional resources.

References

Ausubel, D. (1968). *Educational Psychology: A Cognitive View*. New York: Holt, Rinehart and Winston.

Bentley, M. (2009). Nature deficit disorder: Special edition. Retrieved July 5, 2012 from http://www.education.com/topic/nature-deficit-disorder/.

Bentley, M. & Ambrose, G. (1972). *Project New School: A Proposal*. Harrisburg, PA: Pennsylvania State Education Association.

Bentley, M. & Mueller, M. (2013). Developing environmental awareness in children: A nature studies guide for parents and educators. New York: Peter Lang.

Bowers, (2012). The way forward: Educational reforms that focus on the cultural commons and the linguistic roots of the ecological/cultural crises. Eugene, OR: Eco-Justice Press, LLC.

Bowman, B.T., Donovan, M.S., and Burns, M.S. (Eds). (2001). Eager to learn: Educating our preschoolers. Washington, DC: National Academy Press.

Chaille, C. & Britain, L. (2003).*The young child as scientist (3rd ed.).*Boston: Allyn & Bacon.

Cohen, F.G., & Warner, A. (2009) Youth and environmental Action: Perspectives of young environmental leaders on their formative influences. Journal of Environmental Education, 40(3), 27-36.

Community School. (2000). Statement of purpose and philosophy. Retrieved June 5, 2000, from www.communityschool.net/.

Freire, P. (1970, 2000). *Pedagogy of the Oppressed.* New York: Continuum International Publishing Group.

Gardner, H. (1999) *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.

Goodlad, J.I. (1984). A place called school: Prospects for the future. New York: McGraw-Hill.

Harte, J. (2007). Human population as a dynamic factor in environmental degradation. *Population and Environment*, 28(4/5), pp. 223-236.

Klein, N. (2011, November 28). Capitalism vs. the climate. *The Nation*. Retrieved July 1, 2012 from http://www.thenation.com/article/164497/capitalism-vs-climate.

Larkin, Doug. (2011). 'Before today, I was afraid of trees': Rethinking nature deficit disorder. *Rethinking Schools*, 26(1), 38-43.

Louv, R. (2008). Last child in the woods: Saving our children from nature-deficit disorder, Expanded edition. Chapel Hill, NC: Algonquin Books of Chapel Hill.

Louv, R. (2011). The nature principle. Chapel Hill, NC: Algonquin Books of Chapel Hill.

Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-being: Synthesis.* Washington, DC: Island Press.

National Commission on Excellence in Education. (1983). A nation at risk: The imperative for educational reform : A report to the Nation and the Secretary of Education, United States Department of Education. Washington, DC: The Commission.

National Middle School Association. (2003). *This we believe: Successful schools for young adolescents.* Westerville, OH: Author,.

National Oceanic and Atmospheric Administration. (2012). NOAA Mauna Loa CO2 Data. Retrieved August 9, 2012 from http://co2now.org/Current-CO2/CO2-Now/noaa-mauna-loa-co2-data.html.

Palmberg, I.E. & Kuru, J. (2000). Outdoor activities as a basis for environmental responsibility. *Journal of Environmental Education*. 31(4): 32–36.

Papalia, P., Olds, S., & Feldman, R. (2008). *Human development*, 11th Ed. New York: McGraw-Hill Humanities/Social Sciences/Languages.

Science and Environmental Health Network. (1998). Wingspread Conference on the Precautionary Principle. Retrieved July 6, 2012 from http://www.sehn.org/wing.html.

Shonkoff, J.P. & Phillips, D.A. (Eds). (2000). From neurons to neighborhoods: The science of early child development. Washington, DC: National Academy Press.

Sobel, D. (1996). *Beyond ecophobia: Reclaiming the heart of nature education*. Great Barrington, MA: The Orion Society.

Tandon, P.S., Zhou, C., & Christakis, D.A. (2011). Frequency of parent-supervised outdoor play of US preschool-aged children. Archives of Pediatric and Adolescent Medicine. Retrieved April 2, 2012 from http://archpedi.ama-assn.org/cgi/content/short/archpediatrics.2011.1835.

Wilson, E.O. (1984). *Biophilia*. Cambridge: Harvard University Press.

Wilson, L.M. & Horch, H.W. (2002). Implications of brain research for teaching young adolescents." *Middle School Journal* 34.1: 57-60.

Wilson, R.A. (1994). *Environmental education at the early childhood level*. Washington, D.C: North American Association for Environmental Education.

Wilson, R.A. (1996). *Starting early environmental education during the early childhood years* (ERIC Digest). Columbus, OH: ERIC Clearinghouse for Science, Mathematics and Environmental Education (ERIC Identifier ED 402147).