

Teen Education in a Time of Climate Crisis

Cedar Oliver

This article isn't about the past. I'll tell some stories of things I've done with young people in Waldorf high schools, but that's not the point, really. My goal is to offer some "conversation starters"—mostly questions, not answers—focused on the future. How can we, how must we, transform what we're doing as teachers in Waldorf high schools? Is it possible to overcome fatalism and cynicism when observing major world crises with students? If we dare to imagine effective, meaningful positive change, in what directions would we be pointing?

I'll begin with an image, a small true story, then I'll ask your patience as I try to think clearly about what's going on and what might need to go on. Then we'll return to stories, possibilities of how we can work together with young people a bit differently and invite you to imagine new stories with me and with your students. Here goes:

Encountering Reality

A couple dozen post-pubescent young people are shuffling into a science classroom. They gather around lab tables, jostling and joking, some opening notebooks, some not yet realizing they didn't bring a pencil. A fifty-something teacher—that's me—chats convivially with a few of them as they settle. At the teacher's prompting, they quiet themselves and mostly listen as the course is introduced: Organic Chemistry, the study of substances in living organisms.

In your imagination, in our collective cultural expectation, in each student's eager or reticent anticipation, what happens next? What will we do during this coming month? Where? Most importantly, why? Who are the intended beneficiaries of this work together?

I'd like to challenge our customary answers to these simple, obvious questions—including my own. I'd like to invite you, and invite my future students, to notice and challenge their, and my, answers to these questions. My rather bold thesis in this article is that the fate of the world may depend on it.

I tried, in small and large ways, during that 9th grade main lesson block, to defy some cultural expectations. An hour later, the lab you might expect to find us in is

empty. We are scattered throughout the nearby springtime forest, some wet-sneakered by the stream, some dirty-fingered in soil under leaf litter, some running to beckon others to come see their botanical discoveries. We are finding, wondering, encountering the living beings whose inner secrets we hope to learn. We are learning what lives and dies, here and now in this place. I am learning, having boldly placed myself in the position of guide and mentor in an ecosystem that I, as a newly arrived visiting teacher, know little about. We gather, openly discussing and debating whether to kill or try to keep alive the beautiful plants and tiny animals we've met. We decide not to kill animals, but to sacrifice some plants. It's a decision—not everyone, including me, is comfortable with it. We, perhaps unexpectedly, care.

The chemistry we explore, back in our warm and comfortable lab, is almost entirely extracted from these living beings we hesitated to kill, gathered in multiple visits to the forest. We learn their names, their traditional medicinal and practical uses, we learn which of them has lived here for thousands of seasons and which are newly arrived "invaders" competing fiercely at the expense of others for a place in this new home. Should we harvest more of the invaders to save the natives? It's a decision I let the group make.

My hope is that together we encountered reality. My belief is that carbon from the corpse of someone you've briefly loved and sacrificed may teach you something different than what can be learned from carbon from a "thing" or a labelled jar. My experience is that young people seeing a bright flame arise from gases expelled out of a plant they had to carefully pry from soil, trying not to damage its delicate lacy roots, inspires more wonder and more complex feelings than the same flammable gas from part of a dead plant they never really met. No matter how urban or digital or self-centered our lives become, young people still recognize that living beings, the non-artificial world not created by humans, is and will always be Reality with a capital R.

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There were tests, writing on paper, sitting in chairs. Vocabulary, concepts, names, even formulas. Tests are about memory. Here's what I hope a young person remembers while taking the test:

When we stood around that tree, and we took a long time to breathe, and we had some trouble focusing on our breath at first but then we imagined our lungs, branch by branch, and saw, branch by branch, how the tree's shape was the same. And the next day when we drew and talked about it, I understood why they both have branches and I liked that. And when we really felt, some of us really did, how our bodies get a bit lighter with each breath, and how the tree is, right now in Reality, taking that little bit of me and making itself bigger, and what was my body is now its body. And how we actually saw that black carbon from that "carbonic air" in the little tree-like plant I collected and brought in, and how I felt a moment of sadness that I had done that to it, and now while we are taking the test I remember for a moment that I am breathing in "vital air," oxygen, from the tree—it's right outside, I see it through the window—and I feel suddenly delicate because without it, if we sealed the tree-breath out, we'd all soon perish.

All these memories make test taking a little harder, as an academic exercise. And they make the actual learning unforgettable. More importantly, we might, on a good day or a good month, get a glimpse of the larger "why:" that education is not for *my* benefit, not to make me smarter or more successful or more wealthy. It's for *us* and for all the living beings we can choose to kill or let live. I need to know their secrets because I am responsible for them. They are, and I am, actually Real.

From Child to Adult

Our picture of what the teen years mean in the story of a lifetime has changed dramatically in modern times. For untold millennia, in diverse cultures around the world, puberty was ritually marked as an entry into adulthood. These rituals held deep meaning for a young person being accepted into adult society, and held deep meaning for their elders as well.

Not only did puberty signify readiness to protect and provide for one's neighbors and family—including raising one's own children—but it also signified a major

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shift in what kind of *education* one needed. In a richly diverse array of culturally specific ways all over the world, post-pubescent human beings almost always transitioned from education focused on *learning* to education focused on *doing*. As young adults assumed their new role as members of society, the role of elders shifted from *entrusted caregivers* to *trusting mentors*.

The primary task of a teenager has nearly always been the same: to be *worthy of trust*. This is at the core of what makes a newly-accepted adult a good co-worker, a good parent, a good family and tribe and community member.

Around the globe, throughout humanity's long tenure on Earth, the message given before and after puberty has been remarkably clear: Before, we elders are *responsible for you*. After, you are *responsible with us*. The rites of passage into maturity communicate clearly, "This is *your* world now. *You* are steward, caregiver, entrusted."

Crucially, in this new stage of life, education is no longer for *your* benefit. Your education is now for the world's benefit. This fundamental change in the purpose of education has been a nearly universal, cross-cultural feature of entering the teen years for most of history and pre-history.

From Adult to Child

In many cultures today, including mine, all this is very different. Roughly a century ago, coinciding with industrialization, *adolescence* was first conceived as a new stage of life, a kind of rift between childhood and adulthood. Since then, the rift has widened: the early years of adulthood have increasingly been moved into childhood. At the same time, biological puberty has somewhat mysteriously shifted from the mid- or late-teens to early- or pre-teen age. Puberty rituals are less common and less culturally important, often taking on the character of special childhood birthday parties rather than qualifying trials for adulthood.

Educational institutions for teens more closely resemble institutions for children: practices such as apprenticeship or inherited family vocation have given way to continued schooling and delayed entry into professional and personal adult responsibilities. While intellectual maturity, embodied in an expanding list of cerebral skills and ideas for teens to master, is expected

at younger and younger ages, social-emotional maturity is increasingly delayed. Cultural stereotypes of people “high school and college-aged” expect *less* responsible behavior even than children, as if self-centered self-destruction is the natural final stage of child development, before the move on to adulthood.

The removal of youth from adult life has consequences for all of us, and perhaps ultimately for the planet as a whole. Some consequences may be positive: Having children a bit later in life is often good for both the new parents and their offspring. Freedom from the expectation of early motherhood can be hugely liberating for young women especially, and on a large scale has been instrumental in allowing women to more fully participate in diverse roles in society. Young people of any gender who can defy the expectation of self-destruction during their teens and early twenties may have many more richly rewarding options available than in olden days when family tradition often rigidly determined one’s life path. Extended education and delayed adulthood may just be practically necessary given the complexity of many modern jobs.

On the other hand, some consequences may be dire. The energy and idealism of youth are precious resources. Keeping them out of the workplace and sequestering them in school for an additional decade must have effects on innovation and values in those workplaces. Ironically—though not surprisingly—many of the most innovative companies are started and staffed by young people who, defying cultural norms, enter the business world while peers their age are still in school. Likewise, many of the most effective “movers and shakers” in politics, nonprofit charity work, and social change movements are young people fortunate or strong-willed enough to shorten the usual timeline for being able to become fully active in adult life.

Notably, over the same century during which an increasing number of young adults were infantilized and institutionalized out of the working world, life expectancy and thus average working age increased dramatically. People living and contributing longer is of course a wonderful thing. Yet the combined effect has, demographically, amounted to an “elder takeover.” The age at which a new person steps into a leadership role in an established institution has increased to the point

where there is often little hope of advancement other than by the bold, risky act of founding one’s own company. This all has some advantages: wise, grounded, experienced leadership can be a great social good. And of course “older” doesn’t always mean “less creative.” Yet, at the risk of ageism, I would suggest that there are in fact stages to any biography, and the way we think and act later in life often over-emphasizes past experience and under-emphasizes fresh perspectives, especially in a rapidly changing environment.

A Sense of Time

Let’s pause that train of thought for another story. A group of teens, standing shoulder to shoulder, gaze out through tall second-story windows beyond some maple branches, over suburban houses, toward a distant ridge-line populated with buildings. That very second, a bird perches in the maple tree.

Ten seconds earlier, notes a young woman, a breeze riffled through the trees shaking a few more autumn leaves loose. In the last hundred seconds? Some of us had noticed the motion of cars and clouds, of a lone pedestrian in the distance.

A thousand seconds is half an hour. We had all entered the room, the sun moved noticeably. Ten thousand? Night to day, we’d woken and traveled. Imagine gazing out the window for a day, a month, a year, a decade, a century. Farms and greenhouses were replaced by houses, these maples grew from saplings.

Not one tree in sight is more than a century old. We, in our minds, see the ancient forest vanish in a moment of sped-up time. Later, we will discuss how and why it disappeared.

But now, can we condense time even more? Can we imagine the timescale of that ridge-line hill appearing? Some students have heard about the glaciers that carved this valley, how great ice rivers rolled and smoothed the boulders we play on in the

park. Ice a mile deep, still receding as humans first come to hunt the great roaming mammals of this cold, cold place.

There is power in looking, and wondering, even when nature has been largely overrun by a human-made artificial environment. How old are the things we see? Are

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there any signs of what came before them? Are there a few Old Things left to tell their stories?

We go out the next day with cameras and try to photograph time. This beautiful spider with raindrops on its intricate web—how long has its kind been living here? This church was built in what year? How far away in space and time did these paving stones come from? How long will this tiny creature live? Can we come away, after wondering over one another's discoveries, with a lasting sense for perceiving a thing's shape in time as clearly as we see its shape in space?

My number one goal every day when teaching, the single criterion by which I judge success, is the transformation of *how we perceive*. If one everyday object or living thing or ordinary experience—in the perception of the students—is forever different after today, our time together will have changed us forever. Anything less than that, as a goal for educators, is aiming way too low.

Young people observing photos or models of hominid skulls from millions of years of evolution, trying to see the differences, must imagine a time when five or six different human-like species shared a world. Looking at a million-year temperature graph, one cannot help but shiver: Suddenly and totally unexpectedly, our increasingly hairless ancestors' warm world turned into an icy endless winter. For a hundred thousand years, we see ice ages coming and going—the next, ominously overdue.

Giving young people an experience of time beyond limited human scale is a great gift, not only to them, but to a world that needs us to see beyond the next fiscal year.

Global Crisis

Businesses, governments, and charitable organizations, during the century in which we've increasingly excluded youth, have grown to become global in scope. A decision at one corporate board meeting can have effects on multiple continents affecting millions of people and vast ecosystems.

One could make quite a study of how the rise of multinational corporations and industrialized nation-states, coinciding with the recategorizing of young adults as

adolescent children, has played out in terms of the ideals embodied in those organizations. What is clear already, without much analysis, is that young people feel frustrated and unheard, as our world faces unprecedented global-level crises deeply entwined with these new massive global power structures.

Arguably the greatest of these is industrialization's impact on climate worldwide. If not an existential threat to the human species, rapid climate change is at very least a direct threat to millions of species of living organisms as well as billions of individual human beings. Yet somehow as a global society, we are seemingly paralyzed—or actually the opposite of paralyzed, stuck in a manic sprint of fossil-fuel powered frenetic activity with no ability to collectively slow down.

That said, there are many efforts to solve this enormously challenging set of problems. Technologically, we humans are more than clever enough. And plenty of people truly care. Most of the vexing roadblocks have to do with the politics of profit or misperceptions of economic benefits.

In progressive educational circles, we are engaged in much collective handwringing about how to do something helpful for our world, and how to engender hope rather than despair when informing students about the state of it. Surely sharing some of the positive efforts going on has to be part of our role as teachers.

In reading this far, you've surely gleaned my sense that global problems are exacerbated by deep systematic issues in education, including Waldorf education, and we ought to be facing and fighting them. This has at least as much to do with our hidden assumptions about human development as any particular "curriculum content."

Yet there are also more obvious and direct ways to address the global climate crisis that do connect to the overt "content" we teach. Young people do need to actually know what's going on in the world, what solutions are being worked on, and what obstacles seem to be most stubbornly in the way. That doesn't always have to involve going outdoors to encounter natural Reality, or transforming perception in the feeling-imbued ways I've alluded to. As an example, here's another tale from a class of 17- and 18-year-olds.

A Numbers Game

So imagine that you, rather than being a senior in high school, are a top Chinese official in charge of energy. You get to choose the mix of renewable and non-renewable energy sources to meet your nation's future needs. What decisions do you make? On what basis do you make them? Can you reduce pollution and global warming and still provide enough energy for your citizens to prosper? If so, how fast?

Using real-world data on energy sources, each student uses a spreadsheet to adjust the mix of natural gas, oil, coal, hydro, wind, solar, and nuclear energy development. Each has its own timescale, environmental impacts, and costs when building plants. You have vast government funds and near-absolute power to do what you decide (benefits of a totalitarian government!). So the problems are easy to solve, right?

Conversations between young, idealistic people given this heady power are fascinating and show a consistent progression over time from naively trying to build a billion solar panels or wind farms to realizing the complexity and trade-offs of the situation. Invariably, there comes an “aha!” moment when you suddenly understand why natural gas is “having a day”—large investments in natural gas turn out to be the only way to get a quick change away from the coal-dominated status quo and “buy some time” to build out a more sustainable energy future while immediately lowering pollutants and greenhouse gas emissions.

Outwardly, this type of exercise, where young people stare at abstract numbers on a computer screen, is the exact opposite of a feeling-imbued direct nature experience. However, it carries a quality of trusting young adults with decision-making powers. There is not a “right answer,” but instead they become quite invested in comparing various approaches and compromises, arguing earnestly about the trade-offs and benefits. When you are in the room with people doing this, it feels important and definitely meets the criterion of changing how they perceive and think about energy and environmental issues.

It's worth noting that preparing this kind of exercise is a quite different learning experience for me as a teacher, as well. I'm not “teaching” something I “know,” but rather gathering information I don't know, trying to empower young people to make big (simulated) decisions. There is always debate, well-founded, about whether I'd set up the spreadsheet in as realistic and accurate a way as possible, and after that debate I always find a better way to set it up next time. Even

updating it with current data for another group always educates me on new progress, issues, and trends. Something about this process feels more like working alongside responsible young adults with respect, rather than dictating “learning” to children.

Who Do You Work For?

A disturbing analogy that often comes to mind for me: If the kindergarten was on fire and the fire department couldn't come because the road was washed out, would I continue this class? Of course not. Without hesitation, the teens and I would rush to help the kindergarteners as best we could.

In the midst of global crises (climate being only one, I'm sure you have others on your list), teaching The Usual Subjects often seems like continuing a quiz while the kindergarten burns. The subtext is clear, even if not stated: Your efforts, young people, are not needed right now. Furthermore, my efforts are not needed either.

We teachers can work hard (as we all do) to convince ourselves and our students that today's lesson and homework are so very important that it's worth taking a workweek worth of person-hours away from other tasks that these energetic, idealistic, competent and insightful young people could be doing to help the world. But are those really clothes that the Emperor is wearing?

We ask ourselves real, important questions like, “How do I include climate change in my curriculum?” and “How do I inspire students instead of depressing them while honestly educating about big problems?” The subtext, or perhaps the actual “main lesson” is that we can't actually do anything *or we'd be doing it right now*. Is this genuinely true? If so, how did we get here and how do we get out of here to help with the fire?

I think these difficult-to-face questions take us back to a fundamental one: Who is this education for? We as teachers and students do a lot of work, literally human lifetimes worth of people-hours. Who are we working for?

I hear a culturally ubiquitous, loud and clear answer in the independent Waldorf schools where I work as a traveling teacher: The individual student. Parents and donors pay money with loving faith that our institutions will give each precious child a leg up in life, an advantage over the teeming masses in a competitive world.

The message to a young person is relentless: “You are worthless to society now and are not yet accepted into it. But you must learn and gain all you can from school,

and this great gift to you will result in your success and happiness in the future. Your focus must always be on yourself, your own individual knowledge and skills and grades, getting all you can, getting more than you feel like you can, getting more and more next year and the next. Get all you can now so you can choose a college that will give you all you want and then, some day you can't quite imagine yet, real life will begin and you will get even more—all you want and all we want for you. Because, despite your current worthlessness, we love you and want the world for you."

In Waldorf schools, we are earnestly striving with all our hearts to provide an alternative to the mainstream idea that education is a cerebral hot-dog-eating contest, with the grand prize being a lifetime supply of hot-dogs. "Education through the arts" aims to at least balance massive intellectual consumption with a healthy dose of creative production. To use a more Waldorfy metaphor, the arts can be the out-breath to an asthma attack of continual academic in-breath.

Even the arts, however, can easily be subsumed into the cult of individual selfishness. Am I actually making and doing for *someone else's* benefit, for the world and not myself? Am I performing for the audience's benefit, or is the audience just people who love me, who are viewing my art and performances for my benefit, to celebrate what a good job I did?

The next story, the last one I have to offer here, is one I ask myself these questions about. It's about an attempt—with questionable success—to do something at least a little bit for the benefit of the community.

Sharing What You Love

One definition of art is sharing what you love. The first step in the process is falling in love.

I recently fell in love with a little trail through some trees behind a Waldorf school. I spent a lot of time there with two groups of teens, 9th and 12th graders. We spread out along the trail, hoping to see who lives there. Sitting for a half hour at a time, looking, listening, is hard work. We tried together to see what sort of habitats this place had. We marked the trail with flags, so each student could go back to exactly the same spot repeatedly. We let time pass—still hard work.

There are stages to this work. First, nothing seems to be happening. Soft wind sounds over a late-summer-green and autumn-brown colored stillness. My own busy mind is all I can perceive. Trying to draw what I see sometimes helps quiet me, centers my gaze outward.

Then, the first miracle happens, at a different time for each person. The Reality of something alive penetrates my perception. A spider's staccato walk, then she leaps, trailing silk. She has eight eyes, golden stripes. Or ants spiral up a vine to a final tender newborn leaf unfolding. And there, grey dots... or are they something... tiny creatures! The ants wave their antennae over the aphids, then an ant puts its mouth on the aphid's back. Or here, beneath a leaf just in the surface of the soil, white shapes wriggling among the little lobster-like roly-polies... Or, how did I not see the rabbit before, when she was seeing me the whole time? Suddenly the featureless nothing-happening world has one small bit of life, then is, shockingly, full of life. Sketchbooks and cameras and poetry journals are active as previously unseen marvels unfold.

The next stage is also predictable: So much becomes seen that I am overwhelmed. How many species of plant are in this square meter? How many kinds of insect have we seen—how can there be more and more every time we go out to look? Don't ask me who eats what, or what all these creatures are doing—how could I ever even begin to know? I need to block some of it out, this place is so thick with life and complicated it's impossible to wrap my mind around it.

Then, with time, the second miracle: *I'm starting to know something*. This is a jumping spider, eyes in front, far from a web, while this other spider waits, barely visible in its web—always in the ivy, never on any other plant. The ants are farming the aphids, drinking their sweet excretions, protecting them from predators. The thicket habitat has these plants and animals, the woody shrub mid-story these others, the canopy its own world.

Each of us finds something, someone, we have started to love. There are quizzes on identifying types of plants and animals. We now feel we know them well: A student notes that everyone obviously got everything right, so why did we even take the quiz? (It's a fair point.)

So together, we make a guide to this trail. The 9th

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graders each make a section of habitat map for the small place they've spent so much time, coordinating on the design and colors, including advice for visitors on who they might find and where to look, what to notice. Our fold-out trail map has poems and microscope drawings and photographs and sketches for each place on the trail. The 12th graders each write an article, illustrated with photos, with in-depth studies of the spiders or trees or worms or caterpillars. As editor, I help the groups design a guidebook, and we make it available to the school community. It means something, maybe, to know it will be read by many people, and that perhaps some of these readers may feel a little of our love for these beings and this place.

Answers?

I want to be direct and honest here: As promised, I've shared more questions than answers... perhaps *no* answers? In none of my stories have I revealed how a small group of teens with an adult or two can solve massive endemic political roadblocks to climate action, or even systemic problems with how modern cultures educate teens.

What I have tried to reach toward is a different way of seeing, a small shift in perception, that might stay with us and alter how we work with young people. I truly believe, and invite you to try on the idea, that we can and should mentor youth differently. We can do better by them, and more importantly, do better by the world alongside them. Some targets, while not easy to bulls-eye, are worth aiming for:

- Encounter non-human-created Reality together. Spend time there.
- Experience time beyond the human scale, and learn to see the shapes in time around you.
- Be clear that our work together is not for your benefit. It is for the world, which needs you.
- Question infantilism. Can we, even in small ways, un-sequester and take responsibility? Show teens that the world does need them, and entrust them with acceptance into society.
- Learn together about the big problems and big possible solutions. Practice nuanced, complicated, compromise-based decision-making and problem-solving.
- Counterbalance individualistic, self-centered intellectual consumption with collaborative, other-centered artistic production.
- Fall in love with a place and its life. Share your love

with an audience, for their sake not for yours.

Doing all these may not solve much, on a global scale. But not doing these, and not asking the kind of questions I've tried to raise here, will certainly perpetuate big problems on every scale.

Waldorf education came into existence explicitly to prepare the soil for a spiritually healthier future for humanity, arising from deep insight into human development. Let's take that mission seriously enough to earnestly question our own cultural understanding of what it means, or can mean, to be a teenager today.

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