

# Inventing the Future

## The Teaching of Environmental Studies

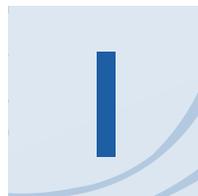
Brentnall M. Powell



**Brentnall M. Powell** is currently Dean of Faculty and Academic Program at The Derryfield School, in Manchester NH. He holds a BA in History from Williams College and an MA in History from Brown University and lives with his family in Hopkinton, NH.



**Jaimie P. Cloud** is founder and president of the Cloud Institute for Sustainability Education in New York City, which is dedicated to the vital role of education in creating awareness, fostering commitment, and guiding actions toward a healthy, secure and sustainable future for ourselves and future generations. It monitors the evolving thinking and skills of the most important champions of sustainability, and transforms them into educational materials and a pedagogical system that inspire young people to think about the world, their relationship to it, and their ability to influence it in an entirely new way.



began my career as an independent school educator teaching American, European, and World History. Ten years later I switched to teaching Environmental Studies, as I became increasingly concerned with the trajectory of our planet and the intersecting problems of energy, food, water, consumption, sustainable development, and global poverty. I believe we, as Americans, have a unique opportunity and responsibility to participate in creating a future in which all people can reach their highest potential and bring their greatest gifts to the world. This can only be done if we understand our impact and reliance on the natural world.

For the past five years I have been teaching a high school humanities-based Environmental Studies class at The Derryfield School in Manchester, NH. The course began as a series of trimester electives for seniors, but eventually became a year-long class for sophomores to provide earlier exposure to some of the world's most pressing problems. Through the course, my goal is to prepare students to play a role in creating a healthy and sustainable future for all humans and the living systems that support life. Fundamentally, the course is about challenging students to become active participants in their own future and the future of the planet.

We start the year by playing the Cloud Institute's [Fish Game](#) to develop an understanding of both

the assumptions and mental models we bring to the questions of resource use and to examine how our economic and social systems intersect with the natural world. Only by carefully reflecting on and understanding our thinking can we build a sustainable future for all.

After the introduction, students explore four different topics: energy/climate change; food; water; and waste/consumption/design through a series of readings, case studies, videos, research, and projects. While the overarching question for the course is *What is the Future We Want?*, we apply a number of essential questions to the topics we study. These essential questions, developed in collaboration with Jaimie Cloud of The Cloud Institute, form the backbone

Community Partner Jaimie Cloud of The Cloud Institute worked with Brent Powell of The Derryfield School in Manchester, NH to develop his Environmental Studies course. During the winter of 2013 they met for two days in the Cloud Institute's New York office and then in a series of follow-up sessions. Jaimie comments on the results of that work:

*I work in the field all the time. I see happy teachers and beautiful units and courses that educate for sustainability. I see authentic assessment instruments carefully crafted to capture student learning, and I see student work as evidence that children and young people are thinking differently and contributing to sustainability as a result of what they are learning in school. What I don't have the opportunity to see too often are letters like the one below. I am sure this is not a rare occurrence but it certainly is nice when teachers share what happens next. Here is a note to Brent from a parent of one of his students. He shared this with me at the end of the 2014-15 school year, in part as a thank you, and in part as an indicator of just how far this work can take us. (The student's name has been changed.)*

Hi Brent,

I thought you might enjoy hearing about the impact you have had on my daughter this year. Anna was studying for her final this afternoon when her grandfather stopped by to visit. He asked her a few questions about the Environmental studies class. [Her response] was initially met with humor and sarcasm as she expected. By the end of a two hour conversation, which attracted my husband and a few other guests, Anna had landed herself a summer job.

Anna will research the cost of putting solar panels on all of the commercial real estate properties her grandfather owns. She challenged her dad and grandfather to really consider changing their environmental footprint. She debated until they really did begin to look at the difference that was possible. So although small changes in lighting were put into place this year, she has encouraged them to consider more. I was impressed and so proud of her.

Thank you.



of the class. They are:

- ▶ What has been the thinking that has caused our ecological decline?
- ▶ What new thinking is required to create a sustainable future?
- ▶ What choices must we make as individuals in order to influence the choices we make as a society?
- ▶ What systems are failing us, where are the places for intervention, and what must be done?
- ▶ In what ways is a healthy society dependent on a healthy natural world?
- ▶ How can we sustain a healthy commons?

The course is also built on the Cloud Institute's [Enduring Understandings for Sustainability](#), which are a set of key foundational principles that create hope and action. Students are routinely asked to consider these Understandings as a basis for their work, and they

build their projects, papers, videos, and presentations around these concepts. The Understandings that have often resonated most powerfully with my students are:

- ▶ We are all in this together
- ▶ Reconcile individual rights with collective responsibilities
- ▶ Create change at the source not the symptom
- ▶ It all begins with a change in thinking
- ▶ Think 1,000 years
- ▶ We are all responsible

Years ago, when I was a high school student, one of my best teachers, A.J. Downs, used to say, “Nothing is learned until it is used.” I have always tried to use that mantra in my teaching, as I believe it deepens student understanding. Throughout the year, students role play



(representing different countries in the UN Climate Conference or various interests in a town considering a new hydro-electric project), build videos to convince “Foundations” to fund their food or water solution projects, and debate the issues of wind power, natural gas, and GMOs. In this way students are

“using” what they learn to move others towards a sustainable future. We never rely on one source for our information but are constantly blending various authors, scientific studies, visual resources, interviews, and quantitative data to build deep and complex understanding. Students are quite engaged when





### A few comments from students on what they learned:

*"The most important thing I've learned is to be aware of the systems around me. While specific details may fade, I've learned that things taken for granted need to be inspected under a closer lens. Food does not just show up at a supermarket, there's a complex and pretty negative system behind it that needs its rewards weighed against its costs. I paid attention to some details prior [to this class], but not to the degree I will now."*

*"The most important thing I learned in this class is how to be an aware member of society. I have begun to notice the little things occurring that have a ripple effect. I've noticed that it only takes one person to begin doing something to start a trend. People will help if you just start... I learned how to take a risk and be a leader."*

*"The most important thing I have learned in this class is how to express my opinion in an assertive way that will be accepted and considered. Before this class, I had a strong opinion that usually was not backed up by facts and I did not express it in a way that could be understood and pondered. The debates in class helped me realize how to form a proper opinion based on facts that I was willing to stand behind. They also taught me how to be a participant in a discussion when someone else felt differently than me. I learned how to say my part correctly and how to consider the other points brought to my attention. Regardless of the future path I choose, this skill will take me farther in life than any information I learn from a textbook."*

course concepts appear in the daily news, as this makes the course relevant and important, and they enjoy seeing these debates play-out in real time through real people. This year (2015-16) we paid close attention to the UN Paris Climate Conference and applied the concepts of systems thinking, design thinking, and social entrepreneurship to a Food Design Challenge Project. Students were asked to identify a problem within the food system and design a solution based on empathy, interconnection, and economic viability. They worked to develop a business plan that would be self-sustaining, created a video to "pitch their idea," and then debated the different ideas in front of faculty and student judges.

My hope is that through studying these issues, students discover their own ways to contribute to a more sustainable future. For some, this might mean changing habits around energy use or consumption, for others it means shifting the way they eat, or changing the food-buying patterns of their families. After taking the class, many students report looking at colleges differently and applying to schools which have strong sustainability programs and mindsets. In the end though, just like any good class, the goal is to build relevant and transferable skills and ways of thinking that will serve students well in the future. The biggest challenge I find in doing this work is blending the



A digital poster made by a student as part of the Consumption/Waste/Design Unit.

scale of the problems we face with the innovative solutions that are emerging. Often students can get discouraged when faced with the enormity of the questions — how do we move towards a sustainable, abundant, and equitable future and how do we confront our own unintended complicity in the systems that do us harm? But everyday I work with students who have the energy, creativity, and honesty it will take to tackle these challenges, and everyday I am inspired by their hopefulness for the undertaking. We return often to the famous Albert Einstein quote: *The significant problems we face cannot be solved with the same level of thinking we used to create them.* In that idea, and in the students I work with, I find the

hope and the thinking — both individually and collectively — to invent the future we need.



## RESOURCES

### The Cloud Institute

[cloudinstitute.org](http://cloudinstitute.org)

An excellent resource for overall understanding of EfS and home of The Fish Game

### The Fish Game

[cloudinstitute.org/fish-game](http://cloudinstitute.org/fish-game)

### EfS Enduring Understandings

[bit.ly/205oSYM](http://bit.ly/205oSYM)

### Climate Interactive

[www.climateinteractive.org](http://www.climateinteractive.org)

Provides World Climate Simulation and other resources on energy and systems thinking. We use these materials in our Climate Conference role plays

### Post Carbon Institute

[www.postcarbon.org](http://www.postcarbon.org)

We use a number of these readings in our study of energy, food, water, and resiliency

### Contact the Authors:

▶ Brent Powell  
[bpowell@derryfield.org](mailto:bpowell@derryfield.org)

▶ Jaimie Cloud  
[jaimie@cloudinstitute.org](mailto:jaimie@cloudinstitute.org)