Emotions in Teaching Environmental Education

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Emotions in Teaching Environmental Education
Cassie Quigley
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Abstract This op-ed article examines the emotional impact of teaching environmental science and considers how certain emotions can broaden viewpoints and other emotions narrow them. Specifically, it investigates how the topic of climate change became an emotional debate in a science classroom because of religious beliefs. Through reflective practice and examination of positionality, the author explored how certain teaching practices of pre-service science teachers created a productive space and other practices closed down the conversations. This article is framed with theories that explore both divergent and shared viewpoints.

Keywords Emotions- Environmental Science - Positionality - Schisms - Religious Beliefs

‘What church do you go to?’ Sarah, a student in my environmental science class asked me when we were discussing the impacts of climate change. ‘Well, we are new here. I am not sure,’ I responded nervously, ‘I was raised Catholic but….’ ‘So you don’t go to church?’ Sarah probed. ‘She’s a Yankee. Catholics are different up there,’ Zach interjected. ‘Oh! Well you can come to my church.’ Sarah offered. ‘I am not sure that is appropriate. I don’t feel comfortable talking about my religious beliefs with my students.’ I responded with an emotional tone of both surprise at the question and indignation that I would need to respond. In that instance, I silenced my students and created divide that felt insurmountable.

This exchange occurred my first year of teaching environmental science at a Southeastern public university and still haunts me today. I chose the word, haunt, because it...
frequents my thoughts. Even though several years passed since this encounter, I often reflect
on the way I positioned myself with this emotional response. Positionality is a critical factor
for teaching relationships; it sets the tone for learning, affecting its course and outcomes. It is
absolutely essential for researchers working in environmental education to be aware the
complex ways in which the teacher’s position shapes the power relationships between
teachers and students.

As environmental educational researcher, I understand that climate change science is
complex and requires knowledge in multiple domains. Complicating this matter is that most
environmental topics involve examining one’s own actions, positions, and choices, and
therefore can make people uncomfortable about their role in environmental degradation.
Importantly, solving environmental issues requires shared human concern and responsibility,
as communities in all nations and geographic regions grapple with ecological degradation and
its associated consequences. *But what happens when people do not share concern or
responsibility for the impacts of human consumption of the earth’s resources?* For the past
few years, I experienced this difference of concern and responsibility in my environmental
science classes. I teach environmental sciences, and so, I am familiar with the debates
surrounding climate change. My students often talk about variability in climate projections.
They cite the flawed data and unreliable models. They mention that we could be heading into
an ice age and thus the earth temperatures will cool soon. They discuss how the amount of
solar radiance could be causing the changes in climate. With these responses, my students
remove themselves from responsibility of reducing their impact on the earth, as one student
put it, ‘it is going to happen any way, it is God’s will.’

Reflecting on the emotional way that I initially responded to my students’ reactions to
impacts of climate change, I attempted to remove all emotion from my teaching of this topic.
I approached the course with the notion they would be teaching science (they are all middle
school preservice science teachers), and the human impact on the environment is a part of the
state curriculum, and thus would be a part of my instruction. I decided after this initial
emotional response, to stick to the facts, and only the facts regarding human consumption of
earth’s resources. We looked at the Ice Core data. I showed pictures of the Arapaho Glaciers
taken at 1898 and 2003. We analyzed NASA satellite images of North polar ice and time
temperature graphs over the past two centuries. We looked for trends in the Keeling curves.
We even discussed weather patterns from the family farms where many of the students work.

At the end of the discussion, I raised the question, ‘So, given all the data what do you
think about climate change and its impacts?’ Their responses were unequivocally, ‘I don’t
believe it.’ They would talk about variability; they would talk about how the data I presented
were only part of the story. They would point to the recent cold snap. I was frustrated but
even more—I was baffled. How could these students, who had little issue talking about a
common ancestor or evolution, have such trouble with climate change? What I discovered,
was we had completely opposite worldviews. These conflicting worldviews in combination
with emotionless teaching, I created more distance between my students and me.

According to Barbara Fredrickson(2001), certain discrete positive emotions such as
joy, pride, contentment, interest, and love all share the ability to broaden people’s
perspectives and thoughts, while negative emotions narrow them. When I was responding
negatively to the students’ reactions about human impacts on the earth, I was, in affect,
causiing them to shut down to new thought. Moreover, because of my worldview on the
environment and my assumptions of the belief systems of future science teachers, I presumed
we would have similar worldviews. This misperception on my part made the opposition
tougher for me. To me, it seemed personal. And it was, because they were attacking my worldview, just as they felt I was attacking theirs—we were at an impasse and one that could not be dealt without addressing the emotions of teaching environmental issues.

Undoubtedly, I understand there are reasons for opposing worldviews and that differing worldviews can be emotional for both parties. Findings indicate, and are supported by my experiences, that presenting scientific observations, such as CO2 trends, Ice Core data, glacial area change, and Keeling curve trends, is often not enough to persuade a person to reject their previous beliefs and become convinced of the scientific theory. Reasons for the persistence of worldviews even in the light of scientific evidence refuting those notions involve the emotions and self-interest people project onto their deeply held beliefs (E. U. Weber & Stern, 2011). Making progress in convincing people of the validity of scientific theories like climate change must include an understanding of the emotions and interests strongly tied to the perpetuation of the prevalent belief-systems. For me, that included examining my own positionality with environmental issues with scrutiny towards where I was creating more dissent.

As I examined the ways in which I was preventing a shared space from occurring, an obvious way was I did not outwardly talk about religion. One reason was I taught at a public university and therefore felt a responsibility to maintaining the separation between religion and education. However, as I reflect on the past few years of teaching, I realize it was more than that. In fact, I was raised Catholic. I was baptized, received first communion, attended Catholic school for 8 years, and was confirmed. I was comfortable talking about religion and being in a church. In fact, I enjoy the ritual of a Catholic mass even though now I only attend them for family events.

When I moved to the conservative South, I quickly realized that being Catholic was not viewed in the same light as being a Southern Christian. It was as if I wasn’t Christian enough. It is with this realization that I understand, although I hid behind the responsibilities of teaching at a public university, the reality is I did not talk about my religious beliefs with my students because I felt like an outsider to the group. When I considered discussing my religious beliefs, the questions began: How much should I reveal? Should I mask my specific religious beliefs (Catholic) in favor of common ground? We were all Christians, right? Should disclose that I no longer attended church? Ultimately, something else scared me. If I revealed too much, I wondered—would they try to convert me? I worried that if I revealed I did not belong to a church, and the students tried to convert me to their religion, and I declined—it would destroy the learning environment—just as it had done in my first year of teaching. I felt vulnerable. Since that original encounter, I made a conscious decision that I should not reveal anything about my religious beliefs. Because our views about religion were different and these understandings were influencing the way we individually regarded the environment and our responsibility to it, incommensurability was established.

These incommensurable views often result from a ratcheting-up of opposition, referred to by anthropologists as schismogenesis. During this ratcheting-up, one side of the argument makes a statement to the opposition and the opposition responds with an argument that builds upwards and is more divergent from the original argument. Gregory Bateson (1935) developed this notion of schismogenesis, and described it as mirroring interactions, where every move by each side makes the other respond more negatively. For example, if two people are in a disagreement about the causes of changes in climate, one side might make a statement that current climate changes are human-induced. The other side might say the causes are historical changes in climate and that these changes have always and will
always occur. Then, the opposition might state the changes are coming closer together and
are more erratic. The other side could respond that the Ice Age was erratic. And so the debate
continues, with neither side willing to find an area of agreement or shared understanding.
Speaking from experience, this type of opposition occurred over and over again in my
classroom.

However, Bateson argues there has to be a moment that prevents the schismogenic
unit (a person or a group) from destroying itself through excessive disagreement. A kind of
discomfort might develop that would make normal social functioning increasingly difficult.
Something must exist to stop the progression before it reaches this state. This is what was
missing from my classroom debates—and perhaps from the national conversation. This
notion of schismogenesis is valuable to understanding environmental perspectives because as
we look for ways to solve environmental issues that plague our communities, understanding
the relationships that prevent opposing viewpoints from finding common ground is vital.

Because of the challenges in my classroom, I decided to research divergent
worldviews. In this work, I found there were times when the people acted as a part of the
group and other times when they functioned as an individual in a group context. For example,
when people act as a group, there is an ethos that binds the group and actions that are in
response to that ethos. In my classroom, I noticed the ethos that bound my students was their
interoperation of Christian values and their actions, such as not recycling because of their
belief that God would take care of those who were saved, were related to these values. Raimo
Tuomela (2007), who studies how people share viewpoints, notes there are times when
people do not act or think using collective intentionality, or acting as a group; instead they
operate individually, even if they are sitting with members of a group to which they belong.
In my classroom, I noticed if the ethos that bound them was Christianity but felt it was their
responsibility to take care of God’s creation and therefore did recycle; they were not acting
with collective intentionality of the classroom that felt recycling was unnecessary.

Although Tuomela’s work explores the shared point of view, he also discussed
dissent within groups. Typically, he asserted, there are intentions or actions that are not ethos-
compatible that cause the dissent. Accordingly, in my classroom, the topic of climate
change was not compatible with many students’ ethos, and therefore there was dissent.

When students’ schismed with me about environmental issues, there was the use of
language that positioned one group against another such as, ‘us vs. you’. The question then
becomes how do I, as the teacher, shift the conversation away from schisms towards more
shared perspectives. I began drawing on Bateson’s notions of shifting the schism to
encourage communication and create productive learning environment. For instance, by
encouraging groups to interrupt complementary schismogenesis by participating in an act of
symmetrical behaviour, this eased the strain and promoted collaboration. For example,
although the students agreed that climate change was not human-induced, they disagreed on
the amount of governmental involvement in regards to environmental issues such as waste
management. But when they became involved in community-driven actions that were not
financially supported by the government, the groups could find an area to work towards
similar goals. Tuomela would call this joint action collective action, which eased the
schismogenic strain. In my class, we discussed how the local city currently was subsidizing
$2 million annually in waste removal. The community was proposing a pay-per-bag
alternative to help alleviate the costs. One of the side effects of the pay-per-bag process is
that it often reduces waste, as families are required to pay per garbage bag to dispose.
Overwhelmingly, the students supported this notion because it was community-driven, and
when it also reduced the amount of waste, the students also noted that this was a benefit to
the community as well. Therefore, although the students originally felt based on their
religious grounds that recycling was not worth it, they felt that if there was a financial benefit
that was community-proposed, and then they did not oppose it.

Another way I found a shared space was to discover ways to change the purpose
behind the opposition. For example, when I introduced the notion that alternative fuels could
be used to help with deforestation, the students felt these were unrealistic because of
economic reasons. But if there were a program that subsidized the innovation, which would
make it more affordable, this made the idea more supportable. The same thing happened
when we talked about innovation in the car industry and talked about the history of the
government supporting advancements in SUV industry and tax breaks for business owners
who leased large vehicles but not for those who leased smaller ones. As we explored these
topics, they supported the subsidization of electric and hybrid vehicles. I came to realize that
my line of questioning could be harmful though. Once I was presenting the data in regards to
the car industry and a student became very upset describing how they felt ‘cheated’ by the
car industry. She went on to describe how this privileged only certain people and in fact did
have negative consequences on the environment. As I continued to probe her, the other
students responded vigorously in opposition to her comment, citing that ‘It was a person’s
God-given right to buy a car and use as much gas as that car required. You believe, that
right?’ The student left the conversation by retreating back on her original statement and
said, ‘Yes, of course I agree.’ Here, when I attempted to shift the purpose behind the
opposition, I probed too much, and found I put my student at risk from being pushed out of
the group. Since such investigative questions could put the students in a tricky situation, I
often struggle with this today, I found I needed to be cautious of this
teaching approach in order to respect the vulnerability of my students.

I also noted schisms often occurred when I utilized polarizing ‘us vs. you’ language
and definite words such as must or no choice or no other way. The students shut down or
ratcheted-up their opposition. But when the conversation included notions of we and less
divisive words such as perhaps or one idea or might a shift in the emotional tone in the
classroom occurred and the room felt more comfortable. As I used this less discordant
language, students were more willing to listen to the evidence behind the reasoning.

Through reflection, I noticed students would join together to oppose an
uncomfortable notion, and that I could join them if there was not a clear victor but there was
a clear adversary. One example of this was in the schism surrounding the use of solar energy
versus other fuels. I often disagree with my students around the issue of energy—as I am in
favor of renewable sources such as wind and solar and they are often more in favor of nuclear
energy (there are many nuclear energy sites in the area). However, I found that could find
common ground with the students as we all agreed coal burning was less desirable (most of
the coal industry is located in the neighboring state which made for an easy enemy), thus
creating an schismogenesis between lower-carbon emission energy and coal industry instead
of between the students and me. In this way, there was still an original schism between my
students and me surrounding energy but it was lessened it in order to ratchet against a side we
both opposed.

These possibilities provided pathways for schisms to soften but also maintained the
balance in the classroom so as not to destroy the classroom. The challenge for me is to
continue to find that right balance. How do I maintain the balance of the classroom to create a
safe learning environment for my students but when do I push their thinking to encourage new ideas?

As researchers of environmental issues, such as Elke Weber and Paul Stern (2011) insist, solving these problems is really solving the problem with emotional interactions. I found that understanding these emotional interactions included reflecting on both my teaching and the ways in which my emotions influenced the classroom. As I recognize the importance of examining the teacher’s positionality, I understand because of the advocacy role that environmental education necessitates, there is an obligation for a deep and abiding dialogue. This means my attention to positionality must remain grounded in the examination of self with others. I also believe this positionality also should occur with students. If we seek to create a world that promotes human dignity, the development of sustainable communities, and just distribution of the earth’s resources, is it enough to teach ecological concepts or should the goal also include influencing students’ relationship with the earth? If it is the latter, I posit, that influencing students’ relationship requires a look inward at my position.

The resources necessary to tackle climate change are scattered across different groups and as long as there is no shared perception of the content of the problem, it is difficult to be define the solution. From this perspective, in order to deal with environmental issues we must come to a shared view on the problems facing communities. In the case of climate change, it affects us all. If we recognize the environment is something we share, and if we can keep the conversation going about the environment, we will, however slowly, move towards common ground and ultimately solutions.

References


Author Biography

Cassie Quigley is an assistant professor in science education for the department of Teacher Education at Clemson University. In her teaching, she works to equity and equality in science classrooms. Specifically, she works in the area of environmental justice, which blends activism and science content to improve the wellbeing of all individuals.