Education Minor Capstone Project Reflection

David Zakalik
Introduction (With Digressions)

Søren Kierkegaard says that life must be lived forward, but it can only be understood backward. I don’t happen to believe that statement is entirely true; in fact, life can occasionally be understood as it occurs, and parts of life can be understood before they happen. And of course, some people are both capable of an insistent upon living backward lives. But setting aside my tendency to contradict people much wiser than myself, in this case I will try to understand my experiences in education leading up to my writing this reflection. I find myself at the end of a grueling semester, to say nothing of four frantic years, in which I have sometimes learned a great deal, and sometimes managed to get away with learning very little. This semester has not been the latter sort.

This semester I’ve been in the process of completing my Minor in Education, in EDUC 4040: Engaging Students in Learning. This course, though not the first to place me in an afterschool teaching environment, has challenged me to go beyond working with children. I’d worked with children before—not by my own preference, but then summer jobs before college so rarely are. I was a counselor at Kiddie Camp, a day camp for kids who are too young for sleep-away camp. I didn’t have a strong affinity for kids that age when I was that age, and I can’t say my attitude toward them had warmed particularly when I started work as a counselor that summer before I shipped off to Cornell.

As I look back, the few shining lights in what was for me a very long and tiring summer with children who lacked some vital survival instincts, were the relationships I found had come about between me and a few of the more likeable kids. One or two had grown on me, rather unexpectedly. The other shining light was that I managed to help those same kids—only two, as it turns out—to learn some very vital things. Very briefly, the kid whose learning really stood out to me and made my struggles with him worthwhile, was a little kid whose name, like mine, is David. At the beginning of the summer, he was so deathly afraid of swimming that my ears rang—and hurt—from him screaming when my
boss and co-counselors insisted that he learn to swim. After quite a lot of crying—his entirely—I began to realize that teaching David was not going to work. Instead, as my father is fond of saying, bribes and tricks were the only thing that worked with children.

If I sound like a cynic, that is because I am. But I follow in the noble tradition of the great Cynic philosopher Diogenes, who rejected theory and emphasized reality and material consequences. (There the resemblance ends, for anyone intimately familiar with the rather checkered existence of Diogenes.) Digression aside... David the Cynic realized that Reason held no sway over a four-year-old, and that teaching David was not going to work. Though I hadn't put the truth into words at the time, I now realize that what did work was helping David learn.

I helped David learn by helping him feel safe. When he clung onto me like a cat at bath time, I let him cling on and feel safe. Then when he had marooned himself on my shoulders, I went out into the water and lowered us both in. The screaming got worse, and I had to talk him down. I also had to allow him to cling onto me—which irritated me to no end. Gradually, the screaming went down and my eardrums weren't much the worse for wear. Then, when little David began bargaining for his life, I let him wear a veritable Styrofoam suit of armor in the pool. Several swim lessons later, he still insisted I had to support him in the water like a child half his age. Timidly, he floated and dog-paddled along, convinced that I was still supporting him with both hands. I wasn’t—hadn’t been for some time. When I told him so, he tried to whimper and cry, and then snapped himself out of it and just kept paddling along. At first I pointed out his progress to the head of the camp when she came by the pool, but soon David took over for me—he was proud of himself.

If I had followed my impatient nature, I would have spent the summer scolding David for refusing to do what all his fellow campers were doing with ease, while David sat on the edge of the pool and splashed his feet. If I stuck to my dislike of children, especially clingy ones, I would not have had David hanging madly onto me, screaming and crying into my ears, but I wouldn't have gotten him into the water at all either. Instead, I put up with the slight indignity, and wound up getting little David to enjoy swimming. I did this not by teaching, but by developing a trusting relationship with David, and a sense of safety when he was with me, in the pool and out.
My afterschool teaching experience at DeWitt Middle School, teaching youngsters to make a short film, has been another exercise not so much in teaching—though my partners and I have made and executed many lesson plans—but in helping students to learn. The beginning of the program was more teaching-intensive, and though the students clearly learned quite a bit, they have clearly learned more about filmmaking by actually writing, directing, acting, and shooting the short film that we are finishing during the week in which I write. As I look back, I realize I haven't built nearly as close and trusting a relationship with the kids at DeWitt as I did with my campers in the summer of '11. These kids are older, as am I, and as a result they are more secure and confident than the Kiddie Campers were. But the goals presented to me and my partners have also been much more rigorous than those presented to a camp counselor. We aren’t just there to make the kids’ time enjoyable; we’re there to help them learn how to recognize authentic dialogue, how to act convincingly for a camera, how to shoot a scene from a script, etc. The goal of getting my campers to swim was already accomplished for me, with the exception of little David.

But I have also been more of a taskmaster to, and a bit less tolerant of immaturity from, the kids at DeWitt. Although my sense of humor and my ability to make sense of their script ideas has warmed them to me quite a bit, and although I’ve made earnest progress in getting to know them as people, I still feel that my relationship with the kids at DeWitt is not as trusting as it ought to be—in either direction. Of course, I only go to DeWitt for a few hours one day a week, but nonetheless, I don’t think I’ve been moved to do the absolute best I can to help them learn, and I don’t think they’ve been motivated to learn as much from me and my fellow teachers as they could be. My relationship with the kids at DeWitt as a teacher hasn’t been nearly as constant as my relationship with my campers, which was an all-day-five-days-a-week deal. But, despite that disparity in relationship, I don’t hesitate to conclude that I’ve helped the kids at DeWitt learn far more than I did the kids at Kiddie Camp.

Now what, you the reader may well ask, does any of this have to do with David's capstone project? My digressions, which are an unwavering constant in my writing and thinking, have to do with several very crucial aspects of the summation of my Minor in Education: (1) The vital importance of a relationship with one’s students, (2) the perennial
danger of students refusing to learn what they aren’t comfortable with, and (3) the power of tricks. It is at this point that I should jolly well get to the point of what my project has been, without going too far into detail. Below is the description I wrote and agreed upon with my project supervisors Donna Levy and Sonja Skelly at the Cornell Plantations at the beginning of this semester:

“Over this semester, my work for the PEEPS [Plantations Environmental Education Program for Sustainability] program will comprise creation of course material for the summer PEEPS program. The course materials I make will be in the form of: poster(s) illustrating greenhouse gasses, particularly CO₂, and gas sources and sinks; and interactive activity(s) demonstrating and/or conceptualizing the greenhouse gas cycle and its effect on the environment. My assisting Donna will also entail helping with student interviews for the selection of PEEPS candidates.”

This has been a very unusual and surprisingly challenging undertaking. I have been creating educational material for a group of students whom I not only barely know, but will also not be working with once the material is created. Although I interned at the Plantations last summer, and one of my fellow interns worked as an environmental educator under Donna’s supervision last semester, I have very little idea of what the program is like, and even less about the group of students Donna admitted into the program this year.

It became clear to me very quickly that creating educational posters—though all the necessary authorities had already approved my project—would not cut it for me. I would have difficulty justifying it to myself, especially in this reflection. The interviewing process made this independent study feel less like a one-off art project and more like a long-term exercise in pedagogy. My participation in the interviewing process was Donna’s suggestion, and it helped her, and gave me a better insight into Donna’s running of the PEEPS program. But, I still don’t know the students I’m making material for. I know their names, and I have a first impression of their personalities, but beyond that I am operating in the dark. However, the interviewing process taught me a lot in its own right about education and the Student-Teacher Relationship.
It is at this point that the second, and much more work-intensive portion of my project comes into play. I am also creating a board game, called ‘The Game of Carbon’, to simulate the everyday decisions that people have to make. The objects of the game are simple: make as much money as possible, but don’t overload the atmosphere with too many greenhouse gases. This game is a simulation of life itself, but if I am successful in my vision, then it will be much more life-like than other simulations the PEEPS students may have experienced thus far in their lives in or out of school.

If, dear reader, you are familiar with educational theory, then you will recognize two core concepts at play here: (1) John Dewey’s notion that education is not preparation for life but life itself, and (2) Robert L. Fried’s notion of the ‘Game of School’ (Passionate Teacher, 1995). Over this past semester, in EDUC 4040, I’ve struggled with the idea that school at its worst is ‘a game.’ Games have rules, goals, and a clear difference between winning and losing. Some games—war games, or scrimmages—can be preparation for the future. In that respect, I wonder whether Dewey would think of such games as ‘mere preparation’, or ‘vital preparation’, or else ‘life itself’.

But there are also games like Scrabble that build mental muscle, or other games (like most video games) that are simply meant to be entertaining, from which players only have fun if they put in effort, and in which players can’t advance if they don’t do much of anything. The ‘Game of School’, on the other hand, is more a matter of survival; of getting away with doing as little work as necessary; of getting out of the hard work of learning. In a way, the ‘Game of School’ as described by Fried (1995), isn’t even a game as much as a perpetual process of coasting and cheating at what should be a very worthwhile game.

The game I’ve created will most decidedly not be a game in the sense that Fried warns of; it will be in the spirit of Dewey’s “life itself”. Of course, I can’t call it ‘The Game of Life’, as that was already taken, but ‘The Game of Carbon’ works much better anyway, if I do say so myself. And now, before this introduction goes on longer than the reflection itself, and before I go into any more digressions (admittedly my own preferred method of cheating at The Game), I will conclude this Introduction and discuss the process of actually making the teaching materials that have comprised my independent study.
A Semester’s Work

When I first reached out to Donna Levy, it was to express interest in creating material for an entirely different part of this summer’s PEEPS curriculum; namely, a science cabaret about plant breeding and GMOs. I have given a great deal more thought to the GMO debate, and I have a more divergent attitude to GMO use than most people who would be described as Liberal, or for that matter, Ithacan. My understanding of carbon pollution is less nuanced and more in line with the general consensus about climate change and greenhouse gas pollution. In short, I felt I had more compelling and challenging ideas about GMOs than about climate change, and I thought that would translate into a greater passion for the GMO project. However, someone else had already filled the position to work on the GMO science cabaret, so when Donna and I sat down to figure out just what I could do for the PEEPS program, Donna brought up the idea of making materials for a lesson on carbon sources and sinks.

When we met on January 22nd, after a preliminary meeting in December, Donna and I came to the agreement that a few educational posters should probably be supplemented with something more substantial. On my end of the project, it made sense for me to do more than a simple graphic design project with a bit of information thrown in. From the students’ end, it would be much more effective to have an interactive lesson, to engage students head-on with the concepts of carbon sinks, carbon sources, and the relevance of carbon pollution to their everyday lives. I don't recall whose idea it was, but I'm fairly sure Donna suggested a board game, and I immediately thought a board game would be a great thing to do.

During that meeting I also got sidetracked with including the effect of CO₂ pollution on the oceans, but Donna reminded me that PEEPS is a garden-based program, and that Donna already has a set of expectations and learning goals, which the material I create is supposed to supplement, but not divert or distract from. Our chat that day was also a
healthy reminder that I oughtn’t get carried away with too many ideas. Fried’s (1995) emphasis on depth rather than breadth, of leaving out content, became particularly relevant to me as I reined in my passion for exploration, and focused my passion on an exploration not of many things, but of a few things in depth. I admit I have an incurable tendency to come up with too many ideas at the expense of focus, and no doubt you, dear reader, will have noticed that tendency over the course of reading this reflection. As a potential future educator, I will need to build a greater discipline over my profusion of ideas. I’ve had plenty of scatter-brained teachers who were no help to young, easily-distracted me.

One of the principles Donna brought to the forefront when we first met was that the material I’d create ought to be applicable to everyday life. As it has become commonly said that we vote with our dollars, especially when it comes to ecological sustainability. The other principle Donna emphasized was that although the lesson plan wasn’t intended to be entirely about gardening, the focus should be on plants, their roles in our lives, and their roles as carbon sources and sinks. There is much we do in our daily lives that affects the environment much more than our gardening practices do, but the focus of PEEPS is on gardening and on plants.

The posters I created were deceptively simple. The first contained pie charts describing the four chief greenhouse gases by percent of total worldwide emission, breaking down each gas in turn by the top four or five sources of emission. The challenge while creating these posters was to get away from the level of detail and complexity that I’m accustomed to going into as a Cornell Student when I’m normally given a scientific poster assignment. I had to remove the extraneous, and focus on what would make clear sense to a middle- or high-school student, without leaving out the essential facts. The second focused even further on the two most potent greenhouse gases, CO₂ and methane, their chief sources, and how to reduce production at the source and also sequester the gases already emitted and in the atmosphere: Sources and Sinks.

The board game I created consists of four characters: a Farmer, a Business, a School, and a Homeowner. These characters are, I believe, the most relevant to the daily life of
everyone—especially students. Business is ubiquitous in American life, and one way or another we must all develop a degree of business sense to get along in the world. Farmers supply our food, and derive their livelihood in one way or another from plants. School is nearly universal in the world population, and is especially relevant to the lives of students in PEEPS whose whole lives revolve around education. The matter of home is slightly different. Though not everyone owns a home—perhaps including some of the families of students in the program?—most people live in a house or a home of some sort. Many environmentally conscious decisions are made in the home, and one of Donna’s learning objectives that she explained to me, is that the kids in PEEPS bring back environmental practices to their homes and families. In short, I strove to ground the game in *life itself*.

The game is essentially one of strategy: each character has a set of cards to play, and a set of Chance cards that determine what happens to each student. Some cards cause CO\(_2\) to be emitted into the atmosphere, while others act as carbon sinks. Some cost players money, while other cards get players more money. The object is to end the game with the most money, but if the atmosphere (represented by a bucket) overflows with greenhouse gasses (represented by marbles) everyone loses. Rather reminiscent of real life, no? The first ‘character’ for which I created cards was the Farmer. This semester I’ve been taking a class in which I’ve learned quite a lot about organic produce growing, and also about sustainable farming techniques. I’m fairly well informed about agriculture, and have always been horticulture-minded and environmentally conscious. As a result, I came up with nearly double the material for the Farmer as for the other characters in the game. PEEPS is, after all, a primarily garden-based educational program; the students work in the Pounder Vegetable Garden and grow a ‘Sustainable Backyard’.

I was well into my work on the cards for the Farmer character, researching different cover crops, their prices, the carbon footprints of different pest-control regimens, etc., when I realized that I hadn’t created any content yet for the other characters. It is not usually like me to be so single-minded; usually my mind switches from one project to another erratically, yet I found myself having to stop, step back, and set aside my obvious bias towards horticulture to research and create playing cards for the other characters.
Eventually I gained momentum and found a certain passion for the creation of the other characters, but I kept returning to the farmer.

At the same time, I came to realize that in real life, not all the cards (i.e. farming, business, and in-home practices) are really on a board game-friendly scale, monetarily or in terms of greenhouse emissions. Scaling the price of a solar panel, an acre of land, the emissions given off by the average home—was difficult to do equitably, and I spent many hours looking up information on industry and environmental websites. Eventually I remembered that this game was not *life itself*, but a microcosm—a game. More importantly, if I was having trouble imagining the monetary and environmental costs of home ownership or owning a business, then PEEPS students would have even more difficulty scaling those things down to a size they could comprehend. If you can buy a whole street for a few hundred dollars in ‘Monopoly’, then I saw no reason why I shouldn’t fit the numbers to the board game, instead of the other way around.

Of course I felt guilty every time I made a solar panel cost nearly the same as a bicycle, but I had no other course except to even out the playing field. Also, it is very hard to play a board game with values in the tens of thousands of dollars. That is not to say I was generating random numbers; there was a certain rhyme and reason to what numbers I decided on, but looking back on the mad dashes of creativity over the course of this semester, I’d be hard pressed to explain either the reason or the rhyme until I sit down with Donna, have a debriefing meeting about the board game, and perhaps make some revisions. It would help to see the game played, but the making of the game took so long to accomplish that a test-run wasn’t possible. But then again, most lesson plans don’t get a test run outside the classroom itself, and this board game is a lesson, not a commercial product.

What of the other half of my collaboration with Donna and the PEEPS program? As a reminder, I also assisted Donna in the process of interviewing students for admission into this summer’s PEEPS program. I shall forgo describing and analyzing each interview and each candidate, and stick to the most salient observations, illustrated with more significant examples. Donna discussed the interview process with me weeks prior to the day we interviewed students together. One of the challenges she described struck me as
particularly unusual but also familiar: the discrepancy between different students' experiences and attitudes. Some students are “converted”, as Donna said, to the mentality of sustainability and environmental stewardship. Although the program does already select somewhat for a specific candidate pool—all of the students are somewhat environmentally conscious—there were still those who were hardcore composters, carbon footprint-reducers, etc., especially coming from the Ithaca area.

But when asked how environmentally conscious they were, some of the students were surprisingly honest about not being particularly environment-minded. Donna told me from the start that she strives to avoid taking on too many of either kind; a mix of students with much to teach and much to learn makes for a more dynamic group, and allows learning to happen between students, instead of the all-too-common model of students as receptacles for teacher-disseminated knowledge. I’ve gotten to know Donna over this past semester (and last summer when I interned at the Plantations) and she is a collaborative teacher—a facilitator of learning. Donna’s strategy of choosing a mix of “converted” and “unconverted” (figuratively speaking) students is very important. Choosing a certain number of students who have a lot to learn about environmental stewardship is also informed by one of her learning goals that I described previously: that the kids in PEEPS bring back environmental practices to their homes and families. The environmentally conscious students we interviewed said consistently that their parents are likewise ‘green’, while the converse was also true of the admittedly ‘non-green’.

The challenge of a mixed classroom is nothing new to me as a student of Education, but the process of handpicking students was new to me, and I'm still not sure what to make of the process. I have been on the other side of the table, applying to internships, and of course to my high school and to Cornell, but I don't think anything I've read or been taught in all my Education courses here at Cornell really prepared me for the process of choosing students. The simple fact is, most teachers don't choose their own students. What’s more, I still had to create learning material for the students Donna selected, with whom I wouldn’t be working in the PEEPS program. More than anything, this semester’s work has been one large exercise in balance. Like a teacher in most learning environments, I’ve had to come up with material for a group with mixed levels of experience, different learning styles,
different attitudes, of which I know very little. I’ve had to step outside of my own passion for the content, and develop a passion for student learning—the other type of passion that Fried describes—and a greater power of cognitive empathy, a greater ability to think like someone who is not me, and who learns differently from me. My preference for unfettered exploration has been my greatest challenge as I’ve worked to become not just a learner but a teacher, over these last few years in the Education Minor. It is on that challenge that I will conclude my reflections.