

Building a Sustainable Infrastructure for Field Experiences in a Test-Centered School

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VEXATION

Like many other schools, the middle school I teach at has a large achievement gap between high and low social economic status (SES) students. My school is in an urban setting, and is composed of 46% white, 43% Hispanic, 8% African American, and 2% Asian students. 42% of our students are eligible for free or reduced lunch. Our science tests show that one of the areas students struggle with is the earth science portion of the test. I believe a major reason why low SES students perform lower than others is because they lack the same background knowledge and experiences as their peers. For example, when discussing earth science, many low SES students may have not been to an ocean or a mountain, making these connections more difficult to master.

This past year, a colleague and I took a small group of students on our first field trip to a marine science institute. The students swam in the ocean, visited marine biology laboratories, went on a marine research vessel, and studied aquatic plants and animals. Some of these students (primarily low SES) had never been to the ocean or on a boat. Although we did not use formal assessments to document the effectiveness of this experience, the low SES students who went on the trip seemed especially motivated and connected when studying marine ecosystems later in the year. I believe the trip was especially successful because of the small group size, which enabled a high teacher to student ratio, allowed us to bond as a group, and avoided the formation of social cliques which typically occurs in larger groups.

My vexation is that our school's infrastructure does not lend itself to field-based experiences, and there is little funding to help make this possible. I have 150 students, and teach 6 classes. Due to scheduling issues, we do not work in small teams where students have the same teachers. Thus, it is difficult to arrange smaller field trips for our students without disrupting other classes and needing coverage for our own class. Our field trip this past year only accommodated 13 students, and was done through our Environmental Club (which avoided the equity issue of who gets to go). How can we logistically take more students on field trips more frequently when our school schedule does not accommodate this? If we only try to take low SES students, how is this fair to the other students?

Funding field trips is also difficult. Even after two weeks of fundraising and some parent support, we still needed significant support from the principal to pay for our small field trip. This would not be possible if field trips were to increase in size and frequency. I have struggled to find grants for field trips, and it is difficult to find time to write grants on top of teaching and planning the trips. How can we build a sustainable infrastructure to support field trip costs? Are there ways to get buy-in from the community to help support us for the long term? These concerns reveal a need to develop "social capital", which "has three forms: (a) level of trust, as evidenced by obligations and expectations, (b) information channels, and (c) norms and sanctions that promote the common good over self-interest," (Dika & Sing, 2002, pg. 33). There are inherent unselfish norms in developing field experiences for students who need supplemental learning in earth science, however I struggle with knowing where to begin in building trust and information channels. These are key elements to create a successful, sustainable field program for our students.

Another important component is faculty and community support. Although our science department is working together to try to include more field experiences for students, there is little collaboration or discussion within the grade-level team. Teachers seem to prefer to work alone and stay in the classroom. When we went on our small field trip, a few English and Math teachers were vocally upset that students had missed out on test reviews and tutoring, and did not see the value of the trip. Comments were made that students would get nothing out of the trip, and teachers seemed confused that low SES (and occasionally misbehaving) students were "rewarded" with the field trip. This sentiment that the "bad" students should not be rewarded with field experiences seems common among teachers, and contrasts with my perspective. If teachers could see how much all students (both "good" and "bad") get out of these field experiences, then I think they would be more supportive. But it is difficult to get these teachers to participate in the trips. How can I draw in their support or better yet, get them involved in creating field experiences as well?

If field experiences do not have physical and social capital (i.e., are not supported logistically, financially, and emotionally by the school and neighborhood community) then the low SES students will not receive the experiences they need to help support their learning. Also, feeling unappreciated by other teachers will make it more difficult to continue to foster field experiences.

VENTURE

The first step my colleague and I plan to take is to replace the current science summer school program for incoming 6th graders with a field-based experience. These students typically come from low SES backgrounds, and spend a few weeks in the summer reviewing material that will be covered in the upcoming year. My colleague and I would spend the first week of a summer program going on smaller day and overnight trips around Austin, and then spend the second week on a camping trip to Big Bend national park, incorporating scientific concepts throughout the experiences. Unfortunately there is little in-school funding, and the majority of funding would have to come from grants or donations. This experience would not only give students the background experience they were lacking, but would also create strong bonds between teacher and student that will help the relationship in the upcoming year. We also would like to involve other science teachers in the summer program, in hopes that eventually all science summer programs are field based. If we could convince a 7th or 8th grade science teacher to accompany us on the trip, then perhaps they could also start up a summer program for low performing 7th grade students. If these summer programs are successful, then this may initiate more support for smaller trips over the course of the year.

My colleague and I also plan to continue field trips through the Environmental Club, which would be smaller scale overnight trips that expose students to different environments. These trips would be useful to try to include other teachers, draw in a diverse group of students to the Environmental Club, and test out field trip locations and activities for the future.

Another venture that needs the most help is collaboration between students at O. Henry Middle School and the local university's biology field laboratory. The field laboratory is five minutes from the school, which would allow students to visit within a block class period, eliminating cost and scheduling issues. The field laboratory has acres of land with controlled barriers to observe and conduct studies on plants and animals. This would be an ideal location for students to study plant and animal life during their ecology unit since it would allow them to get out of the classroom, while also exposing them to a university setting. I was able to secure a tour of the laboratory through a student's parent who works there, and there was ample room for collaboration (many of the control boxes were not being used, and haven't been for years). The major impediment here is that the university is protective of this area, and typically does not allow the public or students to visit. I am unsure how to initiate collaboration with such a large university that seems resistant to working with us.

In closing, I propose an audacious venture to invite you, the crossroads community, to build "social capital" with me and help develop field experiences at my school. There are many pathways for collaboration, and all ideas are welcome. Here are a few questions to help initiate collaboration:

1. Are there people out there, even graduate students, who would have an interest in helping document, evaluate and/or research our summer project or field experiences? Could they somehow be funded through their own university through something like a "research internship" that would end up benefitting everyone?
2. Can you suggest people who might assist with developing proposals that would lead to funding for this project—especially given the demographics of my students? I would like to believe that the overlap between low income students and environmental studies would catch the attention of funders, but I'm not even sure how to locate them.
3. What are some ways that I might leverage "social capital" from outside our immediate area? For example, I suspect that having an Advisory Board would bring attention to this project. And if I wanted to attract such participation, what are the aspects of this study that would be most appealing if I tried recruiting such advice?