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17. USING PHOTOVOICE AS A CRITICAL YOUTH PARTICIPATORY METHOD IN ENVIRONMENTAL EDUCATION RESEARCH

MY EVOLVING EPISTEMOLOGY

Over the last three years I have shifted from teaching a more disciplined and traditional environmental science class to a more critical, local, participatory course focused on the lived experiences of youth. It is difficult to tease apart the methodology from my pedagogical practice since the two are so intertwined. Accordingly, I regard it as important to explore my personal shift as well as attempt to explicate the resulting methodological shifts, which played out in the classroom, and how the outcomes of the classroom informed my teaching. My reflexive praxis has evolved in response to my own growth as a critical educator and through this chapter I want to share how my own growth opened up spaces for my students' growth. Within this space my ideas about teaching and learning, research, and environmental education, three constructs I view as inextricably linked, evolved.

Photovoice was a teaching and research methodology I used to explore what it means to be a young person living in New York City. The evolution of the photovoice methodology over a two-year period shows how the process, products, and outcomes of research looked different as my thinking about research shifted. My experience in the classroom through the use of photovoice contributed to my developing a critical educator identity. Parallel to my transformation, my students developed their own criticality, and this combined phenomenon made the classroom more collective and critical in all aspects of learning and research. The new ways we began to think about research fostered deeper connections between experience and theory and a more dialogic learning space emerged.

My personal transformation is remarkable to me and caught me, every step of the way, by surprise. There were growing pains, like when Eric Bana turns into the *Hulk*. I could feel the shifts in my thinking and in my heart, and I could feel myself fighting with internal, conflicting ideas. Beliefs I always held about research were crashing against new ideas that I was exposed to in my doctoral program and continually challenged my thinking. I come from a background where positivism was the dominant paradigm for research and science education. I never thought about my epistemological stance as a decision I made. I was uncritical because I never knew that being critical existed. I was never given the opportunity to

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challenge these ideas having not been exposed to any critical or sociocultural theory in education. Research was only and always hypothesis driven, quantitative in nature, involved the writing of literature reviews, and knowledge was shared through scientific papers.

The first exposure I had to critical and social theory was in my early doctoral courses. The readings, Freire, hooks, Giroux, McLaren, Harvey, Lipman, Fine, challenged my whole way of thinking about education and research. The classes were dialogic, discussing assumptions about young people and education, and we together tried to uncover some semblance of truth in the messiness of ideas, experiences, power, hegemony, and ideology. I was frightened. I sat in my classes and didn't speak the entire semester. But I listened and felt myself, my thinking, my beliefs, changing. During this time my ways of thinking about education were most challenged by reading *Pedagogy of the Oppressed* (Freire 2000), and connecting Freire's ideas on the banking model of education to my own experiences in the classroom. Reading about neoliberalism and its agenda for public schooling helped me to see our current education system as a vehicle for socializing and reproducing our capitalist society. The hidden messages young people were internalizing by constantly being measured and sorted were working to create an uncritical citizenry. I imaged a classroom that challenged this dominant ideology, a place that empowered young people by drawing on their realities and experiences and connecting these to larger systems of power.

The learning environment, as I re-imagined it, was a classroom where individual and collective life experiences were privileged and valued. I conceptualized an environmental science class that was not dictated by the chapters of a textbook or a test but encompassed the places that young people spend their time. These places would be investigated and phenomena observed would be interpreted and connected to social and environmental theory. By moving away from the traditional ways environmental education is presented, this new course could open up a more inclusive definition of environment that encompassed the natural, social and built spaces that surround youth. I believed this could be accomplished by creating a space in school for young people to explore their identities in relation to the places and people that they were interacting with and by reflecting on how their experiences connected to research and theory. I felt that classes like this were lacking; learning in science was not connected to the lived experiences of students but driven by the memorization of information. I imagined a more dynamic experience where learning and knowledge emerged from students, challenged their views of school, and fostered a more local environmental and critical consciousness.

I was exposed to the research methodology of photovoice in the first semester of my doctoral program and was drawn to its participatory and visual nature, as well as its adaptability. Photovoice is a form of action research in community development and education, where marginalized social groups capture images and voice their concerns in the hopes of creating awareness for themselves and others to spark change (Wang and Burris 1997). I thought that young people would be drawn in by photovoice's use of technology and storytelling. Photovoice has been

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incorporated into community and educational research with youth and has been modified in many ways to meet the goals of individuals and projects (Strack et al. 2004). I latched onto photovoice and saw it as the perfect vehicle to support my re-imagined environmental science class.

In preparation for using photovoice I filled a notebook with ideas about how students would investigate their local environments. Before the class knew about photovoice, I had determined the project goals, the questions students were going to discuss and write about, and the overall purpose of our project. This first year I reduced photovoice to a method, a series of steps that were to be followed in order to reach a specific outcome. The limitations I placed on the class through my thorough planning undermined the participatory nature embedded in photovoice. Through reflection on the first year I came to a deeper understanding of photovoice as a methodology, a means of allowing many voices to come together to tell the experiences of youth in New York City. In the second year of photovoice I allowed the project to be more unstructured and students were better able to analyze their worlds as they saw and experienced them. While the project goal was always to encourage critical thinking about local environments, the second year of photovoice allowed for a more emergent and participatory experience|

PHOTOVOICE YEAR 1

In the spring semester of 2012, I introduced photovoice to a group of 24 students in my college-credit, environmental science course. The students were a mix of high school juniors and seniors who were historically the more academically oriented students at my school. As the course was an elective, the students self-selected into the class after completing their state required science courses and passed the requisite exams. This created a community of students who were more academically driven, college bound, and on the surface had benefited from the traditional model of public schooling.

There were two major tasks planned for the semester, photovoice and an original research project. The photovoice project attempted to discover how young people make meaning from their observations of and interactions with the local environment. Students gathered images from their environments, discussed them in small groups, wrote individual narratives based on a small selection of their pictures, and in groups created a collective presentation about shared themes. This experience was used as a vehicle for students to develop a research question that they investigated, write a research proposal, and collect data to answer their question. The end product, defined by me from the start, was to write a scientific style research paper of their study.

The photovoice project began with students gathering relevant images. During the winter break each student was asked to take approximately 100 pictures and organize them into four folders. The folders included (1) Definition of environment (2) Interactions with your environment (3) Strengths of your environment (4) Areas in need of improvement in your environment. Students returned with mixed results, some had many pictures while others had only a few. Students described a

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sense of confusion about the different categories of pictures, as they had trouble conceptualizing what was meant by each category and where certain pictures belonged. There was also technical difficulty with uploading pictures and many poor quality photos. Overall, the students seemed more concerned about the photograph as an artistic expression than as a representation of their way of seeing.

Students shared their photos in randomly assigned groups of four using the SHOWED method (Wang and Burris 1999). This method is aimed at generating conversation around the images and includes the following questions:

- What do you see in this image?
- Why did you take this picture?
- What is really happening here?
- How does this relate to our lives?
- Why does this condition exist?
- What can we do about it?
- How could this image educate others?

It is important to allocate time and space for dialogue, but most of the research on photovoice does not address the challenges of implementing this in a classroom environment where students are rarely asked to be so open with their thinking. These questions challenged the students and they found it difficult to maintain conversations about their photos without my presence prompting them to go further. Not surprisingly they lacked the language and skills that are developed through dialogue and explored in critical and social theory.

I filled this gap by introducing some of the critical theory that photovoice draws from and by sharing example photovoice projects. But my knowledge was limited and I constantly felt inadequate and ill prepared. As much as I tried to support the goals of the project by building in the time and space for collaborative work, the students could sense my inexperience and the tasks seemed repetitive. Many students had difficulty engaging their peers in conversation and often, all four group members shared their images in one 90-minute class period. This was an indication that students were not having the critical conversations that are inherent in the photovoice methodology and that I had not implemented the structures to allow them to do so. These types of critical conversations are not experienced much in schools (especially in science) where so much of the learning is disembodied from the lived realities of learners.

Through the process of sharing photos, students selected a set of images to write a personal narrative. In the narratives students explained why they selected each image, the context of the image, and how they connected the images to larger themes in their lives and to ideas discussed in class. Student themes included the replacement of natural places with new development, the abandonment of buildings, and the obvious disparity between places like Manhattan and the Bronx. Students shared their narratives with me, not in their groups or with the class, and many saw these as a waste of time.

Groups combined ideas and images into one final presentation for the class. Students told the story of their images and included two discussion questions. Presentation themes included the clash of nature and the city, the possibility of a

utopian New York City, the changes of space in the city, community tolerance and diversity, and stereotypes of boroughs. The presentations were one-sided, not dialogic, and the discussion questions were used as writing prompts that were not shared with the class. While many of the issues that students raised in their presentations and through their questions were deeply critical, “What stereotypes exist in your neighborhood and how do you break them?,” “What is one change in your community that has affected you either negatively or positively?,” and “Throughout the city, why do we see differing access to green space?,” these questions were never explored as a collective. Each group posed questions that reflected their concerns as young people. Potentially these questions could have generated ideas about the lived experiences of youth, informing how young people see themselves in relation to their neighborhoods and the greater city. But the class as I had structured it, did not open up the space for these conversations, reinforcing the ideology that we, in schools, in research, work and think alone.

The photovoice process this first year moved students from their images, to personal narratives, to group presentations, and then to research projects. I was fixated on the students conducting a research project the way I had always thought about research. While I had given them opportunities to explore their perspectives using photovoice, I quickly pulled them right back into a positivist model of research where they had to go through the “steps of research.” Reading the literature, developing a proposal and obtaining approval, writing consent forms, collecting data, analyzing data, and writing a final scientific paper.

The final research papers varied in their criticality. Some emerged directly from the photovoice images and discussed issues of power, race, gender and class, (e.g., Youth Perceptions of New York City Boroughs). Other final papers were closely tied to positivistic, causal models of research utilizing more quantitative data collection methods (e.g., Preferences for Nature Based or Recreational Activities in Central Park). All of the final papers were uploaded to a course website in an online journal format which I believed represented the epitome of authentic research. The variation in the projects reflected my own tensions with research, especially questions about who research is for and how it should be disseminated. Many students struggled with the quantitative/qualitative divide, themselves the product of years of schooling that privileged the scientific method and quantifiable data.

There were many moments for critical reflection during the photovoice phase of the research, particularly the student narratives and group presentations. The students asked many critical questions but few were ever discussed collaboratively or used as springboards for further collective research. I was so focused on using photovoice to get to what I believed was “real” research that I did not allow the time for the narratives to be shared with the class or for lengthy discussions of the presentation themes. As a class we did not capitalize on the concerns and observations raised and as a result I moved us back into the positivistic paradigm of “real” research. All of the critical issues that emerged, diversity, comfort, abandoned space, lack of care for neighborhoods in different parts of the city – all were lost. I take the blame for this. I was unable to see photovoice as an inherently

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critical research methodology in and of itself and I was afraid of engaging young people in discussions about their identities and how these inform their ideas about race, equity, and power. I was scared of the discomfort that I believed would be generated when conversations moved into difficult territory. I was unprepared to allow the class to go where they wanted to go or to allow for more collective and participatory research to emerge from the photovoice project. I felt pressured by my students and myself to complete a research project because that was the “final product” I had envisioned and they continually questioned how photovoice helped achieve this.

One student wrote a critique of photovoice highlighting many of the assumptions held about research.

Photovoice might be a technique to add your voice, but it does not mean we should devote time to such a technique in class. The process is not natural to my classmates and I. The project is in reality so sincere and artistic that it seems wrong. It would almost be like asking students to rap ... Students in the class have already been taken away from the purpose (of photovoice) by having to do it on demand. What are we trying to convince the public of if we did not wish to tell them anything in the first place? What we appear to be doing is making up possible answers based on our opinions. This is not good enough for me and what my fellow classmates will say, will quite frankly not educate me. I personally will not influence people in power through this process. I do not believe I could even influence my peers or neighbors. I feel like my photovoice has *no purpose* and I do not know how to stress that enough. (Candice, Spring 2012)

My role as the teacher during this first year of photovoice felt fixed as I maintained my authority in the classroom. I framed the project, selected the research groups, facilitated the discussions, dictated the research process, and demanded the final product be a traditional research paper. This goes against the tenets of participatory action research where the research questions are meant to be a product of the participants, coming out of their needs and experiences (Reason 2006). I was scared to give up the power and comfort in the classroom for fear of difficult conversations and discomfort. I knew critical conversations were lacking in schools and believed that schools needed to create space for them, but my fear of having these conversations in the classroom was very real and prevented them. I was doing a disservice to my students by not allowing them to engage in critical dialogue but I felt like I was doing it for the greater good of teaching research skills. In my teaching journal I wrote, “I must create the space for students to express themselves without fear” and “Have students direct the conversation, not be so involved in asking the questions” (Spring 2012). It was clear that as much as I wanted to create a critical space for students, I did not know how and I was not ready.

I ended the first year of photovoice with mixed feelings. Many students outright rejected the process while in it, but came to see it as something that helped develop their research question. Other students were turned off to research the way I

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presented it, finding it inaccessible and rigid. Reflecting on the year I see how the entire structure of the photovoice project resisted collaboration, participation, a deepening of critical lenses, a critique of traditional research methods, the development of new data collection methods, or an awareness of who has the right to do research. I tried to address many of these issues the following year.

PHOTOVOICE YEAR 2

Throughout the first year of photovoice, I was constantly learning, reflecting on the process, my practice, and what I was reading in my doctoral courses. I was developing my own critical educator identity and was determined to improve the photovoice project for the next year. I strongly believed that photovoice was a way for me to guide my students in their own critical awakening. I introduced critical, social, and environmental theory throughout the year and used photovoice as a critical research method, with no additional research and no scientific paper requirement. I knew my own criticality evolved through exposure to readings and conducting research and so I created similar opportunities for my students.

The goals of the course and the photovoice project had not changed. I was still determined to create a space for learning that was relevant to young people and I was still interested in reimagining environmental education as more local places that hold meaning. The investigation into local environments began with students completing a community reflection. Participants described their communities in terms of behaviors, environments, strengths, improvements, and ideal communities. Each student completed his or her community reflections on the course website. The first year the website was a space to share the final research paper, but the second year, the website and blog became a shared place for documenting the research process. Community reflection data was collected, shared, and analyzed on the blog and students spent time reading each response, writing about their overall impressions, and collectively generating cross cutting themes. The themes that the students identified were community identity, community access, high school community and diversity, segregated communities, integrated communities, dominant cultures and identity, nature, safety, crowding, housing and alternative spaces. Many days were spent conceptualizing each theme in large and small group discussions and the collective ideas were continually documented on big chart paper (Figure 17.1).

Each student chose a theme based on their interest, formed a research group, and designed a photovoice project through the lens of their research theme. Over a two week period students photographed their various communities and brought photos to class each day to share with their group. Images were discussed using the SHOWED method and for each image students explained how it was connected to their research topic. When students wrestled with ideas or experienced tensions in what they thought about their neighborhoods and what they saw through their pictures, I supported thinking with films and reading. We read, learned, and shared about critical pedagogy, inequality and diversity in New York City, social class,



The image shows a wall that divides the park from the elevated street to the right. The wall is often scattered with graffiti consisting of vulgar language and names of graffiti writers. This graffiti is then covered up with black paint, which is equally heinous against the red wall. There are some communities where walls such as this one would have been painted over with a lovely mural. Graffiti artists will appreciate the art on the wall and children would enjoy the drawings as they play. Unfortunately, there are no individuals willing to take on this task in my community. There are little to no situations in which people come together to better the community. This is what the wall looks like with the black paint covering up the graffiti. The wall displays a hopeless cycle of repainting and graffitiing.

Source: Chloe, April 2013

Figure 17.2. Chloe, describing the wall in a park in her neighborhood. Her research topic was community identity.

For the final research product each group created a presentation of their images and thinking for the class. These presentations highlighted the ways students connected experiences to social and environmental theory we had read and discussed. During presentations the entire class built on the research themes and added interpretations around issues of gentrification, diversity, homelessness, privatization, loss of funding for parks, and housing. These dialogic presentations allowed students to make connections to their own research and for me to see how theory had assimilated into their thinking. Each group presented to the class for 90-minutes, facilitated the class discussion and shared their new knowledge (Figure 4). After each presentation, a short blog post was created to continue discussions and allow for further reflection.

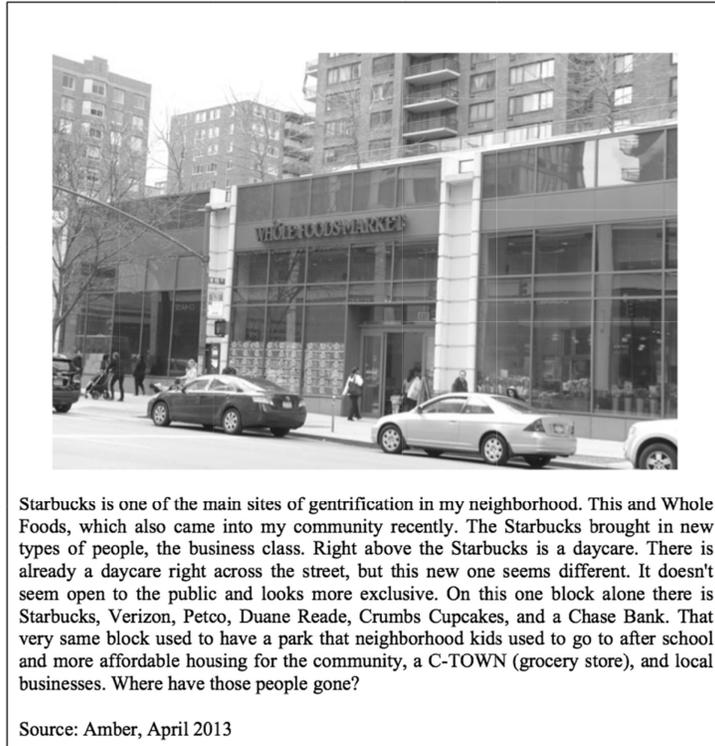


Figure 17.3. Amber, describing the changes she has seen in her community. Her research topic was community access.

After all groups presented, each student reflected on the entire photovoice process on the course blog. Reflections highlighted the cumulative impact of the photovoice research and demonstrated connections between all of the research topics. Four larger themes emerged for students at the end of the photovoice process. Community identity was a concept that many students struggled with, specifically in how communities are defined and bounded. The ways students define their community varied and there seemed to be a shift from thinking about community as a physical geographic space to a more socially constructed and dynamic space.



Figure 17.4. Final student presentations structured to allow an ongoing dialogic process of the research topics.

I never gave much thought to community before this class; I saw community as where I live, but I've realized that you can take your community with you. Community includes the people you hang out with and where you feel most comfortable. (Aurora, June 2013).

The relationship between community identity and the emerging personal and social identities of students were constantly being negotiated. Many students expressed shifts in their own identity in relation to youth, race, and culture and struggled with the influence community had on personal identity or personal identity had on how they perceived their community.

I've noticed many of us struggle with race identification ... I found myself questioning who I was and how that shaped my view of community? Or was it my community that shaped me? (Samara, June 2013).

Almost all students observed changes in their neighborhoods, specifically related to gentrification. Changes included the increased presence of new buildings catering to a different social class than currently is living in the community and an increase in chain stores. Students observed how this paired phenomenon homogenize communities, displace local people and places, and remove a sense of community identity.

And that these big chain stores like Chipotle, Starbucks, and Pinkberry are being put into neighborhoods that did not have them, it's changing the whole ambiance of that community. I don't know if that is a good thing because if every neighborhood becomes gentrified and looks like every other neighborhood then everything is going to look the same and have the same feel and that in itself takes away from our communities. (Angel, June 2013)

Safety, comfort, transportation, quality housing, and parks were all cited by students as aspects (physical, social and psychological) that all communities deserve equal access to but, as was represented by student photos and experience, was not the case. A general observation was that places deemed more "desirable" had greater access to these resources than other "less desirable."

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We deserve to have access to parks, stores that one might find in financially sound neighborhoods, hospitals and even green spaces for the nature lovers in the city. We may not find these things in every neighborhood because that place may be classified as “unsafe” or because they are not in a prime real estate location ... But even so, that should not justify the lack of accessibility to these necessities in neighborhoods. (Gene, June 2013)

Throughout the second year of using photovoice I constantly questioned, “what was happening?” If my students’ knowledge and ways of seeing the world were being constructed in the moments of dialogue and reflection, how could I find out what they were taking away from the research as a learning experience? I asked students to write a critical reflection discussing their learning and growth throughout the year. Student reflections demonstrate an emerging critical identity,

The way I think has changed because I’ve realized so many things about myself ... The way I used to think was the generalized story of what the news media says. I learned that there is more to that. I think more in depth and critically. (Rose, June 2013)

I am more vocal, I question why I think, or someone else thinks something and I now see how our experiences shape our thinking. (Rachel, Spring 2013)

I look at the world through new eyes. Nothing is what it used to be and this couldn’t be better. (Lourdes, Spring 2013)

Student reflections also express a desire to share knowledge with others and a deeper consciousness about the world they inhabit.

I believe that even spreading knowledge through conversation can make a difference. Having as many individuals know about the issue as possible is a great start. That is my start. (Lourdes, Spring 2013)

I want to use what I have learned to help educate people around me so that they too can educate people, a domino effect. I do not want what I learned to stop in the classroom, but want it to continue to blossom. (Marionette, Spring 2013).

Many students also expressed how different this learning experience was compared to previous classes. They highlighted the classroom community and relationships as well as the relevance of the class to their own lives, as key points in their experience.

Listening to what others had to say and having others listen to what I had to say made me feel comfortable with sharing my ideas. This class created a sense of community with class discussions, blogs, and group work. (Ariel, June 2013)

I had many self-realizations in this class and I think many people did as well. I realized how biased I am to my own community and how I have separated myself because of my grades (or priorities) and the stereotypes I have. This

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class was a good place for having realizations and working things out in my mind. (Chloe, June 2013)

I think my biggest change was the way I think of my environment and the places around me. We once had a discussion about an increase in pawnshops in the Bronx and how an increase in pawnshops can show how that industry is taking advantage of the economic situations that the people in the Bronx are going through. This way of thinking has helped me see the underlying problems that affect my neighborhood. (Damien, June 2013)

PHOTOVOICE AS A TOOL TO (RE)CONCEPTUALIZE RESEARCH

There are three interrelated themes about research that emerged out of these two years of working with and modifying photovoice. These insights are related to the evolution of photovoice in the classroom from a purely research method to a research methodology. Firstly, when the end product of research is a scientific paper something stagnant is created that does not allow research to live on. During the first year, we built a website to share the final research papers, and I thought this represented a truly intellectual endeavor, but the papers and the site were inert. The scientific paper is the symbol of a dominant idea of research and its prescriptive nature turned many students off and shut down their ability to be critical. The end product of the first year photovoice research was cloaked in a positivist representation of research, and embodies all of the dominant ideas about what “good” and “scientific” research should look like. This formulaic nature of sharing new knowledge turned off many students to research as it represented the tools of science and research students did not connect with. When we introduce these tools to our students by saying research looks this way we are indoctrinating them into a particular way of thinking about research that negates all other ways of doing research. While our second year end product may not look like “traditional” research, it allowed everyone to be a part of the knowledge production and connect and discuss themes young people wrestle with in a globalized city. Papers can’t evolve after they are finished but conversations, thinking, websites, and blogs can.

Secondly, during the first year of photovoice my role as teacher in the classroom created a divide between me – the keeper of research knowledge, and my students – the beneficiaries of my knowledge. The burden was on me to push them into critical spaces of thinking, to help them build their topics, to help them unearth what they were interested in. Their critical lens was restricted to my interactions with them, not them pushing one another to go deeper and be more. The dialogue was between me and one or two students, not between all of us. What I learned from the second year of photovoice is that youth leading youth in the research process decenters the research enterprise from me by putting them in a position where they are learning from themselves and learning from one another. In dialogue we all pushed each other, moved our thinking together, and I was able to step back from my role as keeper of knowledge and we opened up a space for new roles of teacher as student and students as teachers (Freire 2000). This allowed me

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to be a part of the students' emerging knowledge as much as they were a part of mine. In this way, the entire class was able to learn and, while messy, the photovoice images, narratives, and presentations were expansive. For example, in the first year gentrification came up for some individuals, but not everyone was able to learn from or connect gentrification to their own experiences. In the second year, when looking collectively, students could see how the forces of gentrification were playing out across neighborhoods in New York City, and the concept became more complex and relevant.

Finally, in the first year the class touched criticality during photovoice and then shied away from it during the research. The research moved from the collective to the individual and I believe this was a step backward. On the verge of touching upon difficult knowledge, I defaulted to my comfort areas and went back into my assumptions about research. In contrast to the first year, the second year began with students thinking about community at an individual level and then building more critical understandings, from theory and collective experiences. The class website has since become a storehouse of thinking about social theory, environment, and identity containing photographs, narratives, data analysis, and critical reflections. The site has evolved into a space that has documented the process of research as opposed to the product.

Photovoice as a youth participatory action research (YPAR) method has given me a new perspective on research. I have come to view YPAR as a powerful tool for teaching an interdisciplinary curriculum, incorporating multiple literacies, and connecting to the lived experiences of youth. YPAR democratizes the skills of research allowing youth to learn their own truths, to challenge what they have been told are truths, and to challenge the dominant assumptions about them as youth, minorities, and students (Cammarota and Fine 2008). Once students have the skills to conduct research they can contribute to the discourse, no longer being controlled by those who have power or privilege in education or universities. YPAR privileges the perspectives of youth and allows for polyphonia (multiple voices) and polysemia (multiple meanings) of their lived experiences and their stories. This kind of research by and with young people moves past a single view of what research looks like, allowing it to be truly a participatory and emancipatory tool for young people to investigate their own lives.

PHOTOVOICE AS A TOOL TO (RE)CONCEPTUALIZE ENVIRONMENTAL EDUCATION

Our classroom photovoice research created an opportunity to re-imagine an environmental science class. I used to think that environmental education was all about global issues that happened very far from home like deforestation, the hole in the ozone layer, climate change, and food production. These topics dominate the chapters of every environmental science textbook. With these assumptions so deeply embedded in my thinking, I taught environmental science as content, lectures of information, the science of what was happening. This way of thinking about "the environment" is irrelevant for many urban students and ignores the

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economic and political causes of environmental problems as well as the social implications of these problems.

Throughout the photovoice experience my students and I created an environmental science class that does not use a textbook or follow a structured curriculum. Our class was guided by principles of social justice and ecological justice and was rooted in the lived experiences of the students in the classroom. As a class, we re-conceptualize environment as dynamic and changing, as immediate and constant, as impacted by and impacting on individuals and communities. Environmental science was no longer about issues faced in some far away place but issues young people face locally, and experience in their neighborhoods. Photovoice as a tool allowed us to investigate local communities in a classroom context, and led to a deeper consciousness for the well being of people, communities, and ecosystems.

An environmental science class can become the class of everything. The disciplines are not siloed the way we teach them in schools and by adopting a disciplinary focus we mask the deeper connections between, for example, science, history, and economics. We are doing a disservice in schools by not allowing students to make interdisciplinary connections, and especially in relation to their own lived experiences. What happened in the critical classroom was a filling in of many of the gaps in education and students made new connections between local environmental phenomena and larger economic and social processes.

INCORPORATING RESEARCH INTO TEACHING AND LEARNING PRACTICES

I had held ideas about what traditionally research was and throughout the two years of developing photovoice, I started to have ideas about what research could be. Wrestling through the messiness of photovoice over the past two years I have found ways to introduce students to discourses about what counts as research, lenses through which to look at the world in different ways, and methods to collect data about what young people see in their local environments. By reflecting on the different ways I thought about research through conversations, and alternative research products, I was able to step back, tweak methods, and create new research opportunities that made research relevant and fresh.

The overall purpose of the photovoice work has been to use, modify and develop participatory methods for young people to explore their experiences and relationships in and with place. I believe that through thinking about these experiences and relationships, young people can critically investigate their local environments as places that embody many global and local environmental issues, issues that imprint on their personal and social identities. Utilizing these methods in our environmental science classroom has allowed students to develop research skills including developing research questions, collecting data, analyzing data, and sharing new knowledge. This challenges assumptions about who has the right to research and where knowledge is situated.

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