



## **Reimagining Environmental Education: Urban youths' perceptions and investigations of their communities**

### **Reimaginando a Educação Ambiental: percepções de jovens urbanos e investigações sobre suas comunidades**

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#### *Abstract*

In this study we investigate ways that students in an environmental science course connect learning in their communities using photovoice. As a participatory methodology, photovoice provides a means for young people to critically explore issues that impact their everyday environments. Students utilized photovoice and narratives to uncover common themes experienced by young people in their rapidly changing urban neighborhoods. We found that through a photovoice project that incorporated a critical pedagogy of place framework, students were able to critically evaluate the physical spaces that construct their identities while documenting larger global issues that are happening on a local scale including segregation, gentrification, and differential access to spaces and resources. A critical place based pedagogy can challenge dominant

ideologies about environmental education by highlighting social justice issues that are happening close to home and most salient to student's lives.

**Keywords:** Environmental Education; Participatory Methodology; Photovoice; Place-based Environmental Education.

### *Resumo*

Neste estudo investigamos as maneiras às quais os alunos de um curso de ciências ambientais relacionaram o aprendizado em suas comunidades usando photovoice. Sendo uma metodologia participativa, photovoice fornece um meio para os jovens explorarem criticamente questões que impactam seus ambientes cotidianos. Os alunos utilizaram photovoice e narrativas para revelar os temas mais comuns vividos pelos jovens em suas vizinhanças urbanas em rápida mudança. Descobrimos que por meio de um projeto photovoice que adotou como referencial uma pedagogia crítica do local, os alunos foram capazes de avaliar criticamente os espaços físicos que constroem suas identidades enquanto documentavam tópicos globais maiores que aparecem em escala local, incluindo a segregação, gentrificação, e o acesso diferencial a espaços e recursos. A pedagogia crítica baseada no lugar pode desafiar as ideologias dominantes sobre a educação ambiental pelo destaque de questões sobre justiça social que acontecem perto de casa e mais notável na vida do aluno.

**Palavras-chave:** Educação Ambiental; Metodologia Participativa; Photovoice; Educação Ambiental baseada no lugar.

## Introduction

Entrenched in an era of education reform that continually espouses a dominant set of values, schools have become detached from both the communities in which they are situated and the lived experiences of their students (GRUENEWALD, 2003). In this context, science education continues to privilege a Western notion of scientific literacy, emphasizing scientific content for global economic purposes rather than a locally relevant science education (MUELLER, 2011). This impedes the opportunity for science classrooms to create citizens with a critical understanding of both their local and global social and environmental contexts. While environmental education has the potential to connect youth to their local communities it is often taught as “an already established school subject that emphasizes the relationship between men and the natural environment, in terms of how to preserve it and how to appropriately manage its resources” (GADOTTI, 2008, p.25). Within this traditional paradigm, the historical, social, political, and economic causes of local environmental injustice, including segregation, gentrification, and access to public space, are obscured.

Environmental science curricula often address global issues (e.g. Climate change, deforestation, food production) from a liberal (i.e. individual) perspective, leaving students feeling disempowered, cynical, and frustrated (CONNELL; FIEN; LEE; SYKES;

YENCKEN, 1999). In classrooms students often encounter the environment as a place out there, devoid of people that needs to be protected. Instead, as educators, we need to “connect environmental education with the places where youth live” (TZOU; SCALONE; BELL, 2010, p.105). We can do this with a critical place-based science education that provides an alternative where the classroom is “a site for relationships among teacher, student, and content, and between classroom life and the local communities” (AIKENHEAD; CALABRESE; CHINN, 2006, p.412). This article describes the implementation of a critical pedagogy of place framework in an environmental science class and the use of youth-centered methodologies for students to document their lived experiences in various communities, share their stories, and problematize the complex environmental situations they encounter. By expanding environmental education to include social justice issues as experienced by young people, they are able to develop the critical tools necessary to investigate deeper connections between their immediate surroundings and the historical, economic, and political contexts in which their neighborhood are embedded. These tools provide a basic functional literacy that is needed for all young people to contribute to society as educated and critical citizens.

## Theoretical Framework

A critical pedagogy of place encourages educators to advocate for teaching and learning practice that “relates directly to student experience of the world, and that improves the quality of life for people and communities” (GRUENEWALD, 2003, p.7). The conditions our young people experience do not happen in isolation, but are part of “dense networks of interwoven socio-spatial processes that are simultaneously local and global, human and physical, cultural and organic” (HEYNEN; KAIKA; SWYNGEDOUW, 2006, p.2). By making environmental curricula more local and providing youth with tools to investigate their environment, young people can develop a critical lens that can make visible the power relations that create oppressive socio-ecological situations that have come to define our cities (e.g. privatization of public space, displacement of minority communities).

Youth Participatory Action Research (YPAR) as a pedagogical praxis and research methodology “provides young people with opportunities to study social problems affecting their lives and then determine actions to rectify these problems” (CAMMAROTA; FINE, 2008, p.2). In this praxis, students are co-researchers and together generate critical research themes that address an issue of direct importance to their lived experiences. An environmental science class that embodies an ethic of democratic education for an informed and literate citizenry challenges the gatekeepers of the one size fits all ways of thinking about science education (MUELLER, 2011). Today, it is necessary to contest the status quo of environmental science classrooms by expanding and problematizing our ways of thinking about the environment and environmental education.

Local environments can be examined and documented through photovoice, a participatory methodology by which people identify, represent, and enhance their community through images (WANG; BURRIS, 1997). Photovoice as a methodology

functions as a participatory needs assessment with three main goals: (1) to enable people to record and reflect their community's strengths and concerns, (2) to promote critical dialogue and knowledge about important community issues through large and small group discussion of photographs, and (3) to communicate concerns with policymakers (WANG; BURRIS, 1997, p.370). Participants address the underlying complexities of the situations they experience through the sharing of photos and having critical discussions about the potential ways these situations can be investigated more deeply.

This study addresses the larger conversation about the purposes of environmental education and reimagining this discipline to address issues relevant to young people in their local environments (e.g. cultural identity, diversity, gentrification, and safety) . The purpose is to explore how enacting a critical pedagogy of place and using photovoice as a participatory methodology, in an urban science classroom can reveal the ways young people define, identify, and relate with their communities. The driving questions for our collective research in the class was, "what kinds of communities do all young people feel they deserve?," and "how do students experience their access to resources within and across communities?"

## Methodology

### Context and Participants

This study was conducted in collaboration with students at an urban public high school. The school has over 1300 students and students travel long distances from various parts of the city to attend the school. This creates a unique situation in which the community where the school is located is not the community where many of the students live. The environmental science class, in which this research was conducted, is a college-credit class offered by a large public university in the United States. Each student pays for the class and those who successfully complete the class earn 4 college credits. The class is taught for a full year during a 90-minute period that meets each day. During the 2013 spring semester, students were introduced to critical theory and participatory research methods, including photovoice, to conduct a class research project.

This paper utilizes data collected from the 2013 school year. There were 24 students enrolled in the class; 8 juniors (grade 11, age 16-17) and 16 seniors (grade 12, age 17-18). This class is an elective and is open to any student who has completed the high school graduation requirements in science (two State science examinations in Biology, Chemistry, Physics, and/or Earth Science). Students enrolled self-identified as American, Bengali, Dominican, Ecuadorian, Indian, Mexican, Mixed, Polish, and Puerto Rican. Fifty eight percent of students were eligible for free-reduced lunch; 17% were male and 83% were female; 2 students have an Individual Educational Plan (an official document describing specific learning objectives for students with disabilities), and all of their High School English and Math Performance Levels met or exceeded proficiency standards (as

determined by State assessments in English and Math). Overall this was a class of students who all self-identify as academically oriented.

### Photovoice Process

The purpose of using photovoice was twofold. First the participatory nature of photovoice gave students the opportunity to explore their environments as defined by the social, physical, and built spaces that they interact with and critically examine these spaces in relation to their own identity and experiences. Secondly, the introduction of photovoice as a tool for teaching and learning in an environmental science classroom created an engaging classroom where students participated in the process of research and the sharing of their own knowledge and experiences in place.

Photovoice as a participatory methodology was introduced to the students through readings of previous studies and viewing of online photovoice projects. To begin, students formed research groups based on a theme that most interested them from class community reflection data (Table 1). This data, generated through student reflections on environmental factors and characteristics of favorite and least favorite places in their community, was collected on the class blog and analyzed for major themes by students.

Table 1: Research topics for photovoice project selected by students from individual community reflections

Research Topic	Students
Community Access	5
Community Identity	4
Segregated Communities	3
Dominant Cultures and Identity	3
Nature, Safety, Crowding	3
High School Community and Diversity	2
Integrated Communities	2
Housing	1
Alternative Spaces	1

Over the course of two weeks, students took photographs in their communities and shared their images within their research groups. Most students went out alone in their community but a few groups went together to one another's community. Google applications were used to inventory and share photos within the small groups and the whole class. During group discussions the students were asked to address questions adapted from Wang and Burris (1997) (Table 2).

Table 2: Questions used for discussion of photographs as part of the photovoice methodology.

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**Youth examine photographs through the discussion of these 10 questions:**

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What do you see here?

Why did you take this picture?

What is really happening here?

How does this relate to your research topic?

How do you relate to this picture? How do other people in the group relate to this picture?

Why does this condition (problem, strength, concern, situation) exist?

Is there any action that this generates? What can we do about it?

How could this image educate the community/policy makers?

What do some of our pictures have in common?

Are there any images or issues that are really different that stand out?

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Students were asked to individually narrow down their pictures into 5-10 images in order to generate a personal narrative that helped them connect experiences in their community to their research topic. The individual narratives were shared with the class through our class website. All students read each other's narratives and commented on our class blog about the patterned and contradictory experiences they saw among the narratives.

The final product of the photovoice project, as determined by the students, was that each group would create a presentation using their collective images that summarized the issues raised in their research. Students synthesized their final thoughts on our class research questions and the photovoice experience in a blog post after the completion of all the group presentations.

### Data Collection and Analysis

Throughout the spring semester (February-June) a variety of field texts and data were co-constructed by the first author as the teacher/researcher, and the students in the class. These included a community reflection, photographs, personal narratives, focus groups, final presentations, final reflections, blog posts and comments, and participant journals. For this article, we focus on the photovoice images and narratives.

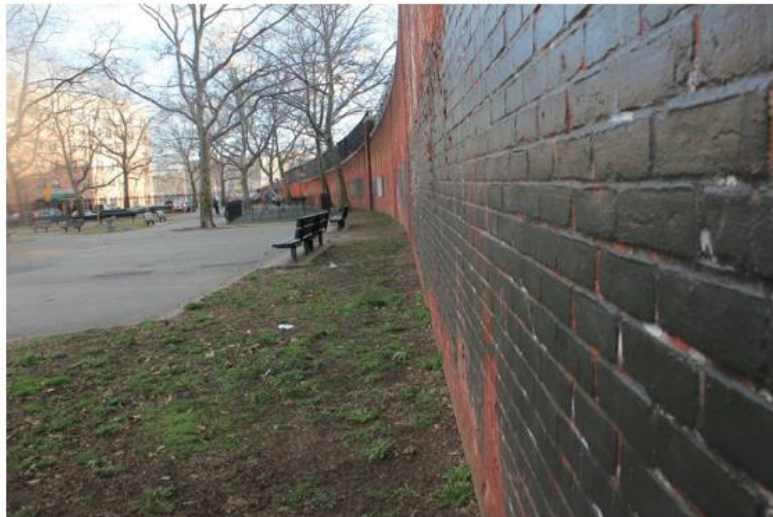
Analysis of photovoice images and narratives involved participants reflecting on common themes throughout the semester. All participant analysis was documented on our class blog and the final photovoice reflections provided a space for students to assess learning and ontological changes as a result of their participation. The first author as the researcher used the multiple data generated by the students to find emergent themes. Themes were selected based on their presence in multiple data sources and as repeated by multiple students. First students-selected photos and narratives were coded with general low inference codes indicating the subject of the image and the purpose of the image as indicated by the student. Because students set out looking with a specific idea in mind for their research, these codes were then combined into more general codes that encompassed broader common themes.

## Discussion of Findings

Analysis of the photovoice images, narratives, presentations, and final reflections by the first author revealed three overarching themes. These themes were 1) photovoice helped students wrestle with the idea that their environments are social spaces that can and must be critically interpreted, 2) photovoice revealed a connection between students sense of place and their shifting identities including how their neighborhoods are different from or fit into the larger discourse on urban communities and urban youth, and 3) photovoice highlighted local issues that are systematic of larger impacts of globalization. These are discussed in more detail below.

### Critical Reading of Space

We are constantly surrounded by spaces that, through their physical makeup, send us messages about who we are, who and what is valued, and what we should or should not care about. Our class photovoice project allowed students to critically investigate the hidden messages in the physical places that make up their environment.



The image shows a wall that divides the park from the elevated street to the right. The wall is often scattered 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 when people graffiti over the black paint intended to cover graffiti. The wall displays a hopeless cycle of repainting and graffitiing.

Source: Chloe, April 2013

Figure 1: A student describing the physical neglect of a neighborhood park.

This image and description by Chloe (for purposes of anonymity, pseudonyms are used), a young Dominican woman, reveals her struggle to understand why the wall in her neighborhood is not like the walls in other neighborhoods. She raises the issue of equity of access to spaces that are clean and cared for and wonders why this situation of neglect may exist in her community but not in another community. She has obviously experienced other parts of the city where graffiti would be handled differently and she identifies a lack of willingness in her community to address this situation or even knowing who is responsible for addressing the situation. Breitbart states,

*Young people who live in declining parts of the city are profoundly aware of the influence that their local environments exert. They can literally see and feel the constraints that dangerous and/or inadequately provisioned neighborhoods place upon them, and they can appreciate the opportunities that safe places, with ample resource provide...These spaces send messages to young people about how an external world values or fails to value the quality of their lives. (BREITBART, 1998, p.308)*

This also raises the issue that in environmental education we often define solutions to problems based on individual actions and not on political or collective actions. Table 3 highlights additional data from student narratives focused on hidden messages in physical space. Students identified issues of inequality to food choices (fresh foods, restaurants), transportation, clean parks, and clean streets as well as the neglect they see for public housing in the same places they see new condominiums rising.

Table 3. Critical reading of space examples from the photovoice narratives and the number of students who raised each issue.

<b>Examples from Photovoice Narratives</b>	<b>Number of students</b>
Neglected parks and other neighborhood spaces	4
Inequality of access to transportation	3
Disparity between public housing and new development	3
Inequality of access to food	2

### Sense of Place and Identity:

Many students throughout the photovoice process struggled with issues around identity and the places they live in. In narratives and final reflections students discussed the connections they were making between how they see themselves and how this is reflected in and reflective of their experience in place. A sense of place reflects this relationship between a person and a place and how through exploring this relationship one learns about identity, culture, one's role in a community and the larger contexts that influence one's lived experiences (Figure 2). Adams (2013) finds that developing a sense of place for children living, interacting, and growing up in transnational communities is complex and involves the ongoing negotiation of identity and resources. Adolescents are seldom asked or given opportunity to critically reflect on how they connect to places and what influence this relationship has on their lives. When given this opportunity to explore these relationships students expressed enthusiasm and excitement about being able to share more of themselves in school.



The image from Rose's photovoice project and her narrative description captures the sense of isolation she feels in a community that she does not see herself a part of. As spaces are culturally produced they are imbued with practices and values that reflect a prevailing discourse, which can create a sense of comfort when we fit in, but a sense of marginalization when we do not. We can see from Rose's narrative that she is wrestling with the implicit message of not fitting in and expresses feeling a challenge to her developing cultural identity as she recognizes her minority status in her neighborhood. Table 4 shows additional examples from student narratives that highlight issues related to place and cultural identity and indicates that a portion of students feel a disconnect between their community and their cultural identity. Many students raised questions about the history of their community and how it came to be, as they know it today. This understanding that places are social productions and can be transformed was a common learning experience.



I was born and raised in my neighborhood all my life. For 17 years I've seen the changes my neighborhood has gone through including my parents when they first emigrated from Mexico to here. I am Mexican American and from living in a predominately white neighborhood that has shaped who I am because I am trying to keep my cultural identity where it is excluded. My neighborhood has been for many years a white and polish community and neighborhood. I am part of the minority in my community which are the: Hispanics, Asians, and African Americans. Being Hispanic or any other race in my neighborhood is tough and isolating because sometimes you have to face racism, the discomfort of not being the same ethnicity of the predominant group because you are "different", and are judged by typical stereotypes of ethnicities in general.

Source: Rose, April 2013

Figure 2: A female student, Mexican American, describing her experience as a minority in her community.

Table 4: Sense of place and identity examples from the photovoice narratives and the number of students who raised the issue.

Examples from Photovoice Narratives	Number of students
Disconnect between community and cultural identity	8
Neighborhood says something negative	7
Safe/unsafe spaces impact engagement with place	6
Neighborhood lacks diversity	5
Neighborhood has diversity but is segregated	3
Neighborhood is diverse	3
Connection between community and cultural identity	3

### Local situations reflect the larger trends in globalization

Local patterns that students identified are tied to issues that are emerging in the current era of globalization. The patterns of geographic segregation, social inequality, marginalizing racial minorities (through gentrification), homogenization of culture (with influx of big chain stores and the loss of local shops), social reproduction, and overconsumption while being played out in the local neighborhoods of young people are tied to trends in globalization, and these trends impact and complicate the relationship that young people have with their neighborhoods and communities. A recurring observation made by students was how they were constantly experiencing a tension between wanting better access to resources they find in more middle-income communities but also sensing that having these things comes at a cost to diversity and equity.

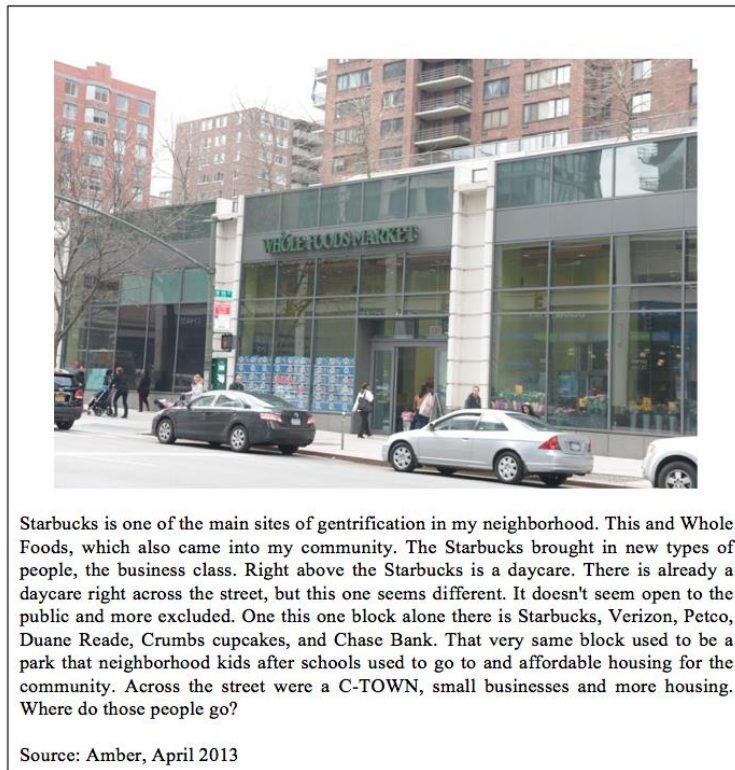


Figure 3: A mixed-race student describing the changes she has experienced in her community.

In this example, Amber observes the changes in her community and asks the question about where the people who were once here have gone. While raised here as a rhetorical question, she and many students expressed an interest in how the changes in the city are pushing displaced populations further away from the city center. Students observed changes in relationship to space (e.g. a small business replaced by a chain store) as well as changes in demographics (e.g. the movement of middle-income people into neighborhoods).

Table 5. Local situations reflect larger trends in globalization examples from the photovoice narratives and the number of students who raised the issue.

<b>Examples from Photovoice Narratives</b>	<b>Number of students</b>
Surveillance	1
Commercialization of spaces	3
Gentrification	4
Displacement of marginalized people	4
Homogenization of culture	3

## Conclusion

While photovoice is one of many tools to connect young people to their local environments, what we learn from this project is that the process of learning in a place (the classroom and community), learning about a place, and learning about the experiences and choices that impact a place are deeply personal and linked to student identity and life history. The experience of learning in place as described in this article shows how young people can participate in the construction of new knowledge about the communities that they come from and how this knowledge becomes incorporated into how place gets constructed and reconstructed by youth.

A critical pedagogy of place is a local learning experience. Environmental education that focuses only on issues at the global scale minimizes the contribution of urban environments to these global problems as well as the concentrated impact of global issues in urban environments (HEYNEN; KAIKA; SWYNGEDOUW, 2006, p.2). The historical, social, political, and economic causes for environmental justice issues like segregation, displacement, safety, and access to public spaces and other resources are obscured and left invisible when we focus on such a macro scale. When we don't engage young people in critically investigating their own community, we are teaching them to ignore local environmental problems that connect to larger global issues. Through dialogues about the lived experiences of urban youth in communities that are being shaped by processes of globalization and gentrification, it is possible to engage in critical thinking that encourages a multiplicity of perspectives around the notion of environment and the purposes of environmental education.

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