Chapter 18
The EJAtlas: An Unexpected Pedagogical Tool to Teach and Learn About Environmental Social Sciences

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18.1 Introduction

The Environmental Justice Atlas (EJAtlas) (www.ejatlas.org) was initially developed to make visible and systematize contemporary struggles against environmental injustice worldwide—with and for affected groups (Temper et al., 2015)—and is becoming an attractive interactive tool to teach and learn about environmental and sustainability concepts and trends from an engaged and innovative approach (Walter et al., 2020).

Since its launch in 2012, the EJAtlas has become a research, teaching, networking, and advocacy resource with thousands of daily visits. As of July 2022, it contains 3700 cases worldwide. Strategists, activist organizers, scholars, and teachers are finding many uses for the database, as well as citizens wanting to learn more about the often-invisible conflicts taking place. The map has become a valuable teaching resource for curricula about environmental social sciences, especially about global environmental justice. It has also fulfilled a valuable networking function connecting groups and actors globally. According to a survey responded to by Atlas users (600 responses), over 37% of Atlas survey respondents report using the EJAtlas for teaching and presentations, representing the most common use of the Atlas by visitors.

Different scholars and policy makers are signaling the improvement of environmental education tools to teach about sustainability as a key strategy to address

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ongoing environmental crises (Cotton & Winter, 2010), and the need to further develop adequate tools to address this complex issue (Besong & Holland, 2015). Yet, amongst this broader improvement and development of tools for sustainability education, there is a noted lack of resources for and inclusion of *environmental justice* curricula that is attendant to issues of racism, poverty, capitalism, and inequalities (Garibay et al., 2016), reflective of the historical exclusion of marginalized communities from mainstream environmentalism (Garibay & Vincent, 2018).

It has been pointed out that there is a notable lack of diverse voices in mainstream environmental education programs and course materials (Garibay et al., 2016; Garibay & Vincent, 2018; Bonta, 2008), which risks reinforcing the invisibilisation of power dynamics and social roots behind our current environmental challenges. Lack of engaged attention to tangible environmental justice issues can cause a sense of demotivation and what Val Plumwood (2002) calls epistemic remoteness amongst students—a central characteristic of the 'crisis of relationships' behind socio-ecological destruction (Weber & Hermanson, 2015). Incorporation of environmental justice in higher education can help better equip future leaders in sustainability to address both environmental *and* social aspects of pressing socio-ecological challenges (Garibay et al., 2016).

Considering the uses of the EJAtlas online platform as a pedagogical tool responds to the call to expand research on environmental justice education, and can also contribute to different debates in learning studies, regarding, for instance, the features, strengths, and weaknesses of emergent new technologies (Cotton & Winter, 2010; Mayes et al., 2015) or Virtual Learning Environments (e.g. Dillenbourg et al., 2002) in teaching. Moreover, an important motivation is in the challenge to find solutions that are sustainable and that have an impact beyond the specific and immediate context. In this regard, the EJAtlas is an innovative platform for students. The process of studying and developing cases in the Atlas is a powerful experience for students that can engage in ongoing environmental justice struggles.

Moreover, as a collaborative learning platform for researchers and activists, the Atlas can contribute to an emerging field that explores the pedagogical opportunities inherent within social movements and activist work, a research field that scholars signal as promising (Clover, 2002; Hall, 2009; Lowan-Trudeau, 2017).

Environmental justice movements can result in diverse intentional and unintentional learning outcomes for participants and observers (Clover, 2002; Hall, 2009; Lowan-Trudeau, 2017). Hall (2009, 46) highlights the individual, collective, spontaneous, and (re)generative pedagogical nature of social movements and outlines three common forms of learning related to social movements: (1) informal learning occurring by persons who are part of any social movement; (2) intentional learning that is stimulated by organized educational efforts of the social movements themselves; and (3) formal and informal learning that takes place amongst the broad public, the citizens, as a result of the activities undertaken by a given social movement. The latter avenue could be considered for the EJAtlas.

This chapter presents the initial results of an ongoing systematization and analysis of the pedagogical uses of the Environmental Justice Atlas (www.ejatlas.org). This research aims to explore why and how the EJAtlas is used for teaching/learning

environmental justice and sustainability and discuss some challenges involved. After this introduction, we present the methods, results, and discuss the main findings of the research, we then conclude.

18.2 Methods: Exploring Contexts, Experiences, and Users

Different data sources were reviewed to study the contexts in which the EJAtlas is used for teaching (country, type of course, level of teaching), the course content and the learning objectives (which concepts, theories, etc.), the pedagogical approaches (lesson plans, exercises, length, etc.) and the key challenges and lessons (including idiomatic, technological, cultural, etc.). We analyzed a range of teaching experiences from China (Northwest Agriculture and Forestry University), Argentina (Universidad Nacional Jauretche), Bolivia (Universidad Nur), Mexico (Universidad Nacional Autónoma de México), Spain (Autonomous University of Barcelona, Pompeu Fabra), Turkey (Bogacizi University), the UK (University of East Anglia) and the USA (Colorado, Michigan, Bishop State Universities) where the EJAtlas was used as a pedagogical tool both in presential and online courses. We conducted five in-depth semi-structured interviews and about a dozen informal conversations with professors that used the EJAtlas. We reviewed teaching plans and the cases added by students to the EJAtlas during seven courses, including five conducted by the first author of the chapter. Students' comments from an international online course on environmental justice (MOOC, University of East Anglia, 2018) that used the EJAltas were also reviewed to assess students' views on the platform. We also considered the results of an online survey responded to by 600 EJAtlas visitors (from 2015 to April 2018). The survey allowed us to examine the profile of the visitors (i.e. students, activists, academics, journalists, etc.), the reason for visiting, and comments regarding the platform.

18.3 Results

The EJAtlas is used in the context of undergraduate and graduate courses in a wide range of countries around the world (e.g. Latin America, North America, Europe, Asia, Africa, Middle East, Australia). The online platform is mainly used in English-speaking courses; however, there are also examples of Spanish-language courses (many cases in Latin America are in Spanish).

The platform is mainly used in environment and sustainability-related courses (e.g., ecological economics, political ecology, environmental sociology, environment and development, environmental justice, etc.), but also as part of courses on ethics, human rights, political economy, and public administration. Some of the key concepts studied with this tool are: environmental justice, environmental conflicts,

ecological unequal exchange, commodity chain, extractivism, ethics or business, and human rights.

Users signaled that the EJAtlas offered a large and diverse number of detailed environmental conflicts aiding professors to: (a) choose cases or build tailored maps to explain concepts and illustrate ongoing trends to support their classes and/or; (b) build practical exercises to guide students in the exploration and comparison of cases of EJ struggles at national and international levels, as well as with diverse thematic foci (e.g. mining, land-grabbing, oil, plantations, etc.). (For more information on these pedagogical approaches, check: Walter et al., 2020).

The survey provided some examples of the motivations of professors visiting the EJAtlas:

> *I am a social sciences teacher. I am interested in finding out about territorial conflicts to teach my students about them.* (Colombian professor, EJATLAS survey)
>
> *The Map is useful to getting global perspective and easy to find project level examples.* (US professor, EJAtlas survey)
>
> *Looking for case studies for public school and business school teaching on ethics, sustainability and other subjects.* (South African professor, EjAtlas survey)

Interviews, the survey, and the MOOC reflected that the use of the EJAtlas creates surprise, interest, and motivation among students. Students value its interactivity, its connection with ongoing processes, that it is useful for activism and social change, and some express their interest to keep exploring the platform after class and become active in adding new cases or sharing with their networks:

> Wonderful resource. I have been exploring all the sites in South Africa and share it with my network via social media. (MOOC student)
>
> Many local activist groups, researchers and conservation practitioners are mobilising against these expansions. I am proud to be involved in this struggle for environmental justice for the local people of ___, and will definitely be working with my friends and colleagues there to register this case in the EJ atlas! (MOOC student)
>
> If I use the Atlas it's to find places where I could volunteer and for me, a map full of former battles is not really useful. (Student from unidentified location, EJAtlas survey)

The potential of the EJAtlas to motivate in a context of classes of "disaffected" students has been explicitly raised in a comment:

> (the EJAtlas is) perfect for showing class of disaffected students all the instances of resistance and creativity that are currently going on. very empowering for them I think. (Masters student from California, USA, EJAtlas survey)

However, during their course in China, Scheidel et al. (2018) found that some students had strong emotional reactions to the cases examined and signaled that:

> As teachers of Political Ecology, we have realized how important it is to show not only the destructive sides of conflicts (e.g., environmental degradation, tensions and sometimes also violence between stakeholders, etc.), but also the productive and creative parts of conflicts when seen as spaces of transformation, where injustices and unsustainabilities are exposed and politicized and where alternative ways to development as usual are explored and put forward (…). As probably many lecturers do, we believe that teaching can make a strong impact in the lives of young students. This impact should be, despite of the heavy topics at times, a positive one that doesn't take away students' hope, but rather motivates them to

> further unpack and confront problematic issues. In this context, Ecological Economics and Political Ecology as teaching subjects may have an important future in China. As one student said, "*I think this is not the end of exploration to environmental problems!* (Scheidel et al., 2018, 12)

18.4 Discussion

The EJAtlas, as a worldwide structured repository of environmental justice struggles, allows teachers to work on complex themes with their classes (social movements theory, environmental justice theory, etc.) with real case studies with which students could connect. The exploration of nearby and faraway environmental struggles, as well as their differences and similarities, allowed teachers to examine EJ concepts and struggles, their roots, power dynamics, and reach. Moreover, the possibility of adding cases, as part—or not—of class, offered students the possibility to become activists and actors of change (Scheidel et al., 2018).

> The Environmental Justice Atlas turned out to be a useful teaching tool to provide concrete empirical case material, on which basis theoretical concepts from Political Ecology and Ecological Economics were discussed. Based on illustrative cases from both China and outside, students could realize the connections between society's material and energy use and the frequently unequal distribution of environmental benefits and burdens across different actors and scales. Thanks to the EJAtlas, students could also see that several environmental problems are not limited to a few single cases, or apply only to countries like China. Rather, they are a systemic feature of those places around the globe where intensive resource extraction and processing is taking place. (Examination of China's teaching experience by Scheidel et al. (2018, 5))

While further research is needed, the initial results suggest that the EJAtlas has the potential to address some key concerns emerging in sustainability studies in higher education- the demotivating 'remoteness' students might feel from tangible, on-the-ground issues and activism, the lack of diverse voices present in course material (Garibay et al., 2016; Garibay & Vincent, 2018) (particularly voices from the frontlines of environmental injustices and resistance movements), and the difficult balance to strike between theory and practice (Weber & Hermanson, 2015). The Atlas offers a platform that students and educators can use to help bridge these gaps- by providing a way for students to tangibly engage with important environmental resistance movements, visibilizing diverse, frontline voices and experiences, and connecting the theoretical to the practical via a range of opportunities for promoting environmental justice work outside of the classroom including advocacy, documentation, networking, and solidarity-building (Weber & Hermanson, 2015). In this vein, Osborne (2017, 852) describes the atlas as a tool for what she terms "Public Political Ecology," in that it "builds a *community of praxis* by using theories of environmental justice and Participatory Action Research methodologies to unite scientists, activist organizations, and policymakers around issues of ecological distribution while rendering resource struggles visible to broader publics."

However, since the atlas was not designed for teaching purposes, but as a research and activist collaborative learning platform, this creates some challenges, such as the tension between timelines for reviewing cases for teachers and the atlas team or the requirements for case study selection or the data form development (e.g. data quality, referencing, narrative voice). Nevertheless, the EJAtlas is a showcase of the pedagogical opportunities inherent within social movements and activist work (Clover, 2002; Hall, 2009; Lowan-Trudeau, 2017). As such, we claim that the EJAtlas is a tool that allows students to learn from and engage with the global Environmental Justice movement (Martinez-Alier et al., 2016; Temper & Del Bene, 2016).

The EJAtlas interactive online functionalities that allow users to search, classify, and add cases also offer a tool for professors to structure dynamic teaching lessons on Environmental Justice and sustainability-related issues. However, we claim that the main strength of the EJAltas as a technological development used for teaching is not only grounded in its interactive functionalities (Mayes et al., 2015), but in its live connection with real-world processes and its capacity to connect with emotions and inspire students inside and outside the classroom.

The experience of Scheidel et al. (2018) also suggests that the deep examination of concepts and real cases of environmental injustice can also be a source of feelings of despair. In this vein, they point to the need to counterbalance the examination of the negative trends and sad stories with the positive processes of social mobilization and the transformations these produce.

18.5 Conclusion

The EJAtlas was developed for and by activists and action research scholars to make visible and connect worldwide EJ struggles, as well as to improve understanding and research in this field. From an empirical perspective, we examined how the EJAtlas was used in different geographical and learning contexts to teach environmental justice and sustainability themes. The analysis of learning and teaching experiences showed that the EJAtlas, as a tool developed for research, social action, and transformation, allowed educators to develop short or long exercises that can motivate students. The possibility of adding a relevant case, which is a more complex, time- and effort-consuming exercise, is attracting interest. The platform offered a pre-built interactive form that allowed for structuring a learning process on understanding the key components of an environmental struggle. Moreover, the result of this exercise can transcend classroom walls and contribute to a wider EJ worldwide collaborative work. Our examination has, however, pointed to some needs and challenges, such as the limited capacity of the current EJAtlas team and the need to improve the involvement of teachers in the final moderation of cases.

From a conceptual approach, the Environmental Justice Atlas contributes to the understanding of the global EJ movement, its claims, and how environmental justice organizations are working around the globe against environmental injustices. The

interactive functions of the online platform also allow a wide range of uses and explorations by teachers and students. These features address some of the challenges of learning (with and without new technologies) (Dillenbourg et al., 2002).

Moreover, the EJAtlas has the potential to address some key concerns emerging in sustainability studies in higher education—the demotivating 'remoteness' students might feel from tangible, on-the-ground issues and activism, the lack of diverse voices present in course material (Garibay et al., 2016; Garibay & Vincent, 2018), and the difficult balance to strike between theory and practice (Weber & Hermanson, 2015). Furthermore, while the debate on the use of new technologies for teaching has focused on the ability of these interactive tools to develop capabilities and improve productivity (Mayes et al., 2015), the EJAtlas showcases the potential to inspire and motivate students of interactive technological tools developed with/for social movements.

Finally, we would like to signal that the results of this ongoing research are feeding the discussion regarding how to improve the Atlas and the way we work with educators and students.

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