Reflections on the Transformative Power of Environmental Education in Contemporary Societies: Experience from Two College Courses in Greece and the USA

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Abstract: In the current information-saturated world of knowledge societies, universities are at risk of training technical experts who hold myopic views of the future, and leaders who are ill-equipped to address the systemic nature of current global ecological, economic, and political crises. In this context, and taking into account the obstacles posed, and the opportunities provided, by contemporary societies, the current paper discusses the design and implementation of courses which not only rely upon, but also increase the transformative power of Environmental Education (EE) and Education for Sustainability (EfS) within Higher Education. We rely on our experience in two college courses, in Greece and the USA, to provide reflections on the integrative, interdisciplinary and collaborative dimensions of EE/EfS and on their ability to challenge neoliberal discourse that permeates contemporary knowledge societies. The qualitative methodology utilized in the paper rests on a self-study research approach and on end-of-term course evaluations filled by the students. We propose that successful design and implementation of EE/EfS courses depends upon the instructors’ (and their institutions’) ability to democratize and rethink the classroom (beyond its physical limits and into the community), to help students self-examine their place in the system, and to create assignments that test the learning process rather than learning outcomes.

Keywords: environmental education; education for sustainability; higher education; knowledge society; neoliberalism; critical pedagogy; Greece; United States

1. Introduction

In an era of global ecological crises (climate change, biodiversity loss and resource exhaustion), economic crises (rising inequalities and mounting public and private debt) and socio-political crises (nationalist revival and the rise of authoritarianism), education is needed, more than ever, to play civic and transformative roles by helping individuals become agents of change, disruption, and creativity in their own lives and that of their broader communities. While education at all levels could fulfill those functions, higher education (HEd) in particular should arguably lead the way, preparing leaders and scientists for the sustainable communities and societies of tomorrow [1].

In the so-called knowledge society where knowledge is a main currency, and arguably a ‘commodity’ produced in institutions of higher education, science and technology have become the favored tools to bring forth ‘technological salvation’. In this information-saturated world, hierarchies of knowledge contribute significantly to power dynamics, which, when left unchallenged, simply
preserve the status quo, instead of shaping sustainable futures. Universities are at risk of commodifying knowledge and of shifting their social mission from a concern for the public good and a focus on civic pedagogy towards an emphasis on skills acquisition and workforce training designed to “reproduce workers, consumers and citizens who meet the needs of neoliberal capitalism” [2] (p. 493). Challenging the status quo and engaging societies on a sustainable development path will require HEd to re-embrace the transformative power of education [3].

Environmental education (EE), in particular, has proposed more radical stances and provided some very valuable insights in the pedagogical shift that may be needed for actual (low-carbon and environmentally friendly) transitions to occur. In an attempt to mainstream Environmental Education, Education for Sustainable Development (ESD) or Education for Sustainability (EfS) has been designed to focus on the interface among social, economic and environmental issues. Thus, it seems poised to provide the intellectual and practical venues through which the changes needed to engage on a less unsustainable path could emerge. While the results have been underwhelming, as EfS has adopted a reformist agenda focused on lifestyle changes at the margin (e.g., switching lightbulbs) rather than more radical views (such as rethinking transportation infrastructure or macroeconomic policies), there is hope that EfS could challenge the current inertia by empowering students to be the source of progress towards sustainability [2,4].

In this broader context, the current paper seeks to reflect upon the following questions: what pedagogical approaches and tools should EE/EfS adopt to help students think as critical learners and act as empowered citizens with the aim to envision and design sustainable societies? And what are the main obstacles and opportunities that instructors face in implementing critical environmental education curricula, given current political economic structures and institutional landscapes in HEd, in the US and Europe (particularly in Greece)?

In what follows, we seek to discuss these questions from the perspective of our experience at two different institutions of HE in Greece and in the US, using two courses as examples. This comparative approach will help reveal similarities and differences that are important either as obstacles or as enhancers for critical EE/EfS educational praxis. To that effect the article offers, first, a discussion of the development of EE, which provides the context for the introduction of the transformative learning approach used in the paper. Second, the evolution of EE/EfS is placed in the context of the changing landscape in HEd, by emphasizing in particular the emergence of the knowledge society and the constraints it places on the use of critical pedagogy in HEd. Third, using a comparative case analysis of two courses in two distinct cultural settings, we discuss course design and institutional aspects that can enhance (or impede) the potential of educational efforts that aim to facilitate the transition towards sustainable societies. Finally, the article proposes a framework, with recommendations for instructors and HEd institutions, for the restoration of the transformative power of higher learning to foster pro-environmental behaviors and social practices. Ultimately, the paper reflects upon the ability of environmental education and its critical pedagogical approach, to play its role in ensuring that “[s]tudents [are] inspired and energized to address important social issues, learning to narrate their private troubles as public issues, and to engage in forms of resistance that are both local and collective, while connecting such struggles to more global issues” [5] (p. 24).

2. Environmental Education and Education for Sustainability: Insights for Critical Pedagogy

Environmental Education (EE) was conceived in the 1970s as an important tool for environmental protection and for the transition to societies in balance with nature [6]. In its first stages, it aimed to promote knowledge about environmental problems and their human causes, with the goal to inspire environmentally friendly ways of living. With this goal, EE criticized traditional educational practices and proposed an alternative pedagogy for changes in social values and practices. From decades of EE praxis, some insights have emerged as significant for the critical pedagogy that is needed for this transition.
As EE theory developed over time [4,7–15], it proposed a very useful categorization of educational praxis—education on, in or for the environment—revealing the importance of the purpose of the teaching/learning process [8,16]. Education on the environment emphasizes ecological literacy and works to enhance learners’ knowledge of the environment. Ecological knowledge transfer and creation are the main goals. However, with time and as relevant literature has shown, knowledge alone is an insufficient motivator for behavioral and, more so, social change [17–21]. Education in the environment promotes immersive (in nature) educational practices, with the aim to trigger learners’ compassion towards nature and other species. It highlights the significance of emotion and of contact with nature as effective ways of challenging the dual perception of humans and the environment—as separate and in competition—and, rather, cultivating the perception of humans as members of the Earth’s bio-community. Education for the environment is education committed to the protection of the environment. It aims to incite learners to adopt environmentally friendly practices and to become active and caring citizens. This is an action-oriented education. Learning occurs in action and interactive activities, and it is meaningful because it relates to real problem solving.

As EE matured, educators realized that a unique focus on environmental aspects was limited; the economic system, social reality and environmental aspects are interconnected and, for effective learning and action to occur, the study of these interactions and a systemic logic are fundamental. In the present globalized world, the need to develop a good understanding of ecosystems, the global economy and contemporary societies as systems with intricate relations within them and amongst them is a fundamental requirement for any change to be possible. Education for Sustainability (EfS) emerged as a consequence of this realization and it emphasizes the need for an integration of ecological, economic and social knowledge. EfS highlights the need for integrative and interdisciplinary approaches. In the present knowledge society, the elation of expertise along with the pervasive introduction of Information and Communication Technologies—which give access to a vast amount of micro-information—cultivate micro-analysis (with the potential of integration of micro-data; see [22]) at the expense of systemic thinking.

EE or EfS strive for active learners, interested and engaged in the learning process via experiential approaches that lead to the discovery and creation of knowledge. However, the transition from active and engaged learners to active citizens is not obvious [23]. In addition to knowledge acquisition, motivation, understanding the connection between the individual and the collective, or between the local and the global, and the ability to unravel power dynamics and to foster empowerment, are also needed [24,25]. Paulo Freire [26], a pioneer in empowering education, has much to offer. His educational approach started from learners’ harsh life experiences and aimed to help them develop a sociopolitical understanding of their lives. Knowledge and learning became “tools” for improving one’s own and community life. Building on students’ knowledge, making knowledge relevant, and posing and solving real life problems are essential elements of critical–empowering pedagogy and transformative EE or EfS. Freire’s insights have influenced the development of the transformative learning approach which “center[s] on personal transformation” [27] (p. 198) that occurs as students’ frames of reference change through a critical learning process [28]. The transformative learning literature argues that EE/EfS should encourage attitudes and behaviors that lead to individual and social change [28]. Therefore, this approach necessitates an engagement with ethical, emotional and political questions in order for faculty to assist students in achieving personal and possibly social transformation [27].

Reflecting on the strengths and weakness of EE and EfS, Jickling and Wals [4] proposed a useful heuristic which places different EE/EfS initiatives in a range from more mainstream to more transformative ones, based on two dimensions: epistemology (i.e., transmissive to transformative learning) and learning process (authoritative to participatory). Such a heuristic provides insights regarding the ability of different learning contexts/efforts to stimulate pro-environmental practices, and highlights the influence of instructors’ epistemology and instructional design choices on the feasibility of desired results and the effectiveness of the educational praxis. However, Jickling and Wals’ heuristic
proposes active citizenry and social learning as characteristics of the participatory learning process, and socially critical and action-oriented knowledge/learning as characteristics of transformative learning. Thus, it does not sufficiently differentiate between critical thinking and an action orientation. Adjusting this heuristic with the use of the framework Marouli, Misseyanii, Papadopoulou and Lytras [25] proposed (see Figure 1 below), allows for a differentiation between social/socially critical learning and action-oriented/active citizenry, as social awareness and knowledge does not automatically lead to action, and especially action for the common good. Marouli’s et al. [25] framework organizes instructional goals into four categories, each building on the previous one: individual change/critical learners; individual empowerment/empowered learners; integration/critical and engaged citizens; and social transformation/empowered citizens (see Figure 1). Higher education should focus on helping transform students into active learners who are able to assess knowledge and to use it critically for problem-solving (critical learners) and who will eventually become creators of knowledge capable of being effective participants in their society (empowered learners) [29]. However, as Marouli et al. [25] argue, in order for students’ personal transformation to lead to actions towards social change (such as the transition to sustainable societies), education must provide them with tools to integrate knowledge in order to address social problems (engaged citizens), and ultimately to create knowledge and engage in actions that benefit the common good (empowered citizens). Marouli et al. [25] connect these instructional goals with teaching methods, instructional tools, and institutional contexts that are best suited for their achievement.

![Figure 1. Environmental education (EE)/Education for sustainability (EfS)—transformative potential and instructional goals.](image)

This transformative learning framework can provide useful insights regarding EE/EfS initiatives that aim to bring about pro-environmental behaviors and social practices. Such educational efforts should aim to be working in the lower right quadrant of the diagram. Before presenting an analysis of two case studies using this transformative learning framework, it is essential to discuss the context in which learning is taking place within institutions of higher education in Europe and the USA, in particular, as it bears upon the ability of instructors to deliver this critical pedagogical approach.

3. Higher Education in the Knowledge Society

Higher Education has traditionally been the place where, on the one hand, young people come to gain knowledge and to become future leaders, and on the other, new knowledge is created via research and scientific questioning. Questioning prevailing views in the search for new knowledge has been a traditional role of research and Higher Education [30]. Expert knowledge, diffused and acquired in
universities, is seen as separate and qualitatively different from lay knowledge and sets HEd apart from society. HEd has been organized in disciplines, with distinct terminologies and methods, facilitating the development of expert knowledge. This increasing specialization has generated noteworthy achievements in all disciplines, deriving from very specialized scientific questions. This fragmented approach has also enhanced individual and disciplinary interests, rather than advancing the notion of knowledge for the common good [31].

In modern knowledge societies, knowledge and expertise constitute the main currency of the economy and the moving force of socio-political relations. Information and Communication Technologies have significantly enhanced this trend. Higher Education institutions are now viewed as central players in the knowledge-based economy, and the enhancement of economic performance [32–35]. As Patrick indicates: “Thus the role of schools and universities in relation to educating the individual has changed markedly in the last thirty years: the end of education can be considered as the creation of the knowledge worker” [36] (p.2). This model turns universities/colleges into locales where young people increase their marketable skills in order to ‘optimize’ their future income and turns faculty into the educators of effective “knowledge workers”. While knowledge should be, by nature, a social good that emerges from the process of social learning and that is created to serve the community, the current approach to the knowledge worker in HEd assumes that social knowledge is the mere aggregation of ‘individual’ knowledge acquisition. Thus, knowledge creation needs to regain its social and ethical dimension [37].

The funding context of research has changed from mainly dependent on recurrent funding—i.e., not earmarked for specific research projects—to external, competitive funding for specific research activities [38]. This shift leads funders and scientists to favor research on incremental innovations (as they are safer choices) and research with short term and measurable outputs, since basic or ground-breaking research, or research with long-term impacts, have smaller possibilities of success [39].

While one should beware of technological optimism or the belief in technological salvation, there is little doubt that the development of new techniques will be required to accompany life-style changes advocated by environmental education. Yet, the standardization and individualization of knowledge production has slowed down the processes of creation and diffusion of novel ideas and ways of doing that may be necessary to operationalize the discourse on the transition to sustainable communities.

The commodification of knowledge and the increased focus on the individualized knowledge worker in higher education are symptomatic of the current period of globalization lead by transnational corporations. The corporate discursive hegemony and its reductionist view of the role of the State in the economy, often referred to as neoliberalism, are responsible, by and large, for the emergence of forces which are turning institutions of higher education into business-like entities, and commodifying knowledge [40,41].

Neoliberal principles legitimize a mode of production of knowledge that emphasizes the need for students and faculty to focus on their own entrepreneurial selves to the detriment of collective and collaborative learning and/or system thinking. Thus, Springett [42] argues that the influence of corporate governance on institutions of higher learning has diminished their focus on collaborative endeavors that may be necessary to fully embrace the objectives of sustainability in general and Education for Sustainability in particular.

While a large number of universities and colleges around the world have signed various declarations about, and/or joined associations dedicated to, sustainability, there remains a sense that the operationalization of this commitment has been difficult in reality [43]. The focus on specialization and expertise within the knowledge–society paradigm, which is increasingly commodified under neoliberal governance principles, signifies that “[higher education] teachers are not for the most part educating for sustainability, or for sustainable development” [43] (p. 755). There is a strong sense among EE practitioners, in particular, that the discourse on sustainable development, to the extent that it exists in higher education, has been “cornered by economists” [44] (p. 355) and by natural scientists or technology experts.
Under these conditions, we reflect on the type of obstacles that EE- or EfS-oriented courses may face in HEd, as well as on the opportunity that they offer to restore the transformative power of higher learning. In order to provide context to these reflections, we discuss our experience in two classes at two similar institutions of higher learning in the USA and in Greece. Through this comparative analysis, we aim to highlight some of the ways in which the factors discussed above affect the delivery of EE/EfS in different settings and to provide suggestions on how to design EE-oriented courses that empower students to act as agents of change towards the design of sustainable societies.

4. Two Case Studies

In what follows, we reflect on two university courses—an Environmental Studies course (ES 4017) on Environmental Justice at Deree—the American College of Greece and an Economics course (ECON 202) on Ecological Economics at Denison University—that aim to stimulate change in environmental attitudes and/or practices in two different countries: Greece and the USA, respectively. These courses were selected on the basis of formal and informal comments instructors have received from students, which indicate that they have been successful EE/EfS initiatives with transformative potential. In addition, both are in a Liberal Arts Education context and attract middle–upper level students. However, while the two courses take place within ‘Western’ societies that share similarities in their economic and political system, the American and the Greek context differ in several ways: in terms of culture, socio-economic reality, and educational system. After a short description of the goals, pedagogy and methods of each course, a comparative analysis of the two courses is provided based upon the transformative learning framework, discussed in Section 2, as a guide for an HEd that can lead the transition to environmentally sustainable and caring societies. This framework connects the purpose of the educational praxis, teaching methods, instructional tools, and institutional context, among others, in the discussion of the transformative potential and effectiveness of HEd EE/EfS initiatives. Our aim is to extract replicable lessons regarding what can make an EE effort effective in the present socio-economic context.

4.1. Methodology

As in many teaching and learning-related studies, in this paper we use a qualitative methodology with the aim to reveal the perceptions of students and the impact of the courses on students’ understanding. Two methods are used: a self-study research approach [45,46] and the regular course evaluations (survey) students fill in after the completion of their coursework. Both courses have been taught repeatedly over a period of several years: ES 4017 six times in the period 2014–2019 and ECON 202 10 times in the period 2004–2017. Thus, there is a multi-annual body of instructors’ reflections and student feedback on the courses. Self-study depends on self-reflection and is a method that helps instructors learn and improve the educational praxis [47]. Self-reflection is fundamental in critical pedagogy and EE/EfS. We, the instructors, have used the proposed framework (see Section 2) to critically analyze our notes and thoughts regarding the different iterations of the two courses. The instructors have been systematically reflecting on the courses: as an institutional requirement, at the end of the semester at Deree–American College of Greece, and every three years at Denison University, and more “freely” during the planning of each new iteration of the course. Students’ course evaluations were also analyzed using the same framework for comparable information. In both institutions, students evaluate their courses at the end of the semester via a survey tool which is primarily based on multiple choice questions. The course evaluation tool of ACG was revised in 2015 to include two open-ended questions (i.e., “Which aspects of the course and/or the instructor did you find effective in relation to your learning?” and “In what ways could the course be improved to facilitate your learning?”). Similarly, at Denison University, students are posed open-ended questions regarding their assessment of the strengths of the course/instructor and of ways the course/instructor could be improved (the instrument hasn’t changed in the time period the course has been offered).
All substantive comments (i.e., comments that include reflections, rather than single word answers) to these open-ended questions at ACG and Denison have been used in the following analysis.

Then, a comparative approach is adopted: firstly, between instructors’ and students’ experiences, and secondly, between the two national contexts. Instructors’ and students’ views are compared in order to verify the validity of instructors’—researchers’ observations regarding pedagogical methods that can mobilize students towards more environmentally friendly practices. Comparisons between the two national contexts provide more valid observations regarding the impact of the socio-economic and educational contexts on the possibility of Higher Education to bring about change towards more sustainable communities and environmentally friendly practices.

4.2. Context, Goals, Pedagogy and Methods for the Two Courses

As seen in Table 1, both HEd institutions—Deree–American College of Greece and Denison University—are small in size (approximately 3,000 and 2,200 students, respectively) and are anchored in the liberal arts (LA) tradition. Liberal arts education promotes an interdisciplinary and critical-thinking approach to education by exposing students, broadly and deeply, to diverse bodies of knowledge, rather than to mere expertise and specialization. While both institutions are American universities, the socio-economic contexts in which they operate are different. Deree—the American College of Greece has to dialog with the Greek socio-economic reality, cultural norms and values, as well as an educational system that undervalues private universities/colleges. Greece has gone through the equivalent of a great depression since 2009. The economy is recovering but is still facing financial and fiscal constraints. For Denison University, the socio-economic reality is different. Despite mounting public debt, the US currently faces very few financial or fiscal constraints (other than those self-imposed by the political class).

There is a clearly expressed disenchantment with the political establishment in Greece and the United States, which can be argued to be due, in part, to neoliberalism [40]. The electorate in both countries has been looking for alternatives to mainstream parties at the polls over the past several years (a phenomenon that has transcended European borders). In this context, students and their families in both the US and Greece view education as the path to economic wellbeing; their view is increasingly instrumental, as choice of major is directly influenced by its perceived relevance in helping students get their first job out of college (instead of preparing students for life-long careers, for instance). This trend in both countries has increased the marginalization of the humanities, arts, EE/EES and related fields.
Table 1. Basic information about the two case studies.

<table>
<thead>
<tr>
<th>Type of university</th>
<th>ES 4017: Environmental Justice (Deree–American College of Greece)</th>
<th>ECON 202: Economic Growth and Environmental Sustainability (Denison University—USA)</th>
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<tbody>
<tr>
<td></td>
<td>American-style Liberal Arts</td>
<td>American-style Liberal Arts</td>
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<td></td>
<td>Approximately 3500 students</td>
<td>Approximately 2200 students</td>
</tr>
<tr>
<td></td>
<td>Accreditation under both the US and the UK higher education systems</td>
<td>Accreditation under the US higher education system</td>
</tr>
</tbody>
</table>

Context: Structural, Cultural, and Institutional

- **Deree has to dialog with the Greek socio-economic reality, cultural norms and values.**
  - Difficult economic conditions in Greece since 2009.
  - As of now, there is no clear path to prosperity for a majority of Greek residents.
  - Students face a market with few job opportunities and high unemployment, leading to increased anxiety about job opportunities and career choices and to an instrumental approach to their education.
  - Time management/scheduling of classes does not allow for flexible time slots for out-of-the-classroom activities.
  - Strict/rigid assessment strategy—defined before the course itself due to university accreditation system linked to UK’s Open University for Greece.
- **Disenchantment with the political establishment in Greece and the United States: radical right and left politicians have captured people's attention by focusing on internal issues to the detriment of international ones.**
  - “Embedded neoliberalism”: mainstream socio-economic discourse; many students are generally pre-disposed to see the role of ‘entrepreneurs’, ‘high tech’ as salvation, while pre-disposed to view the role of government, collective effort as limiting/constraining innovation, as with investment in renewable energy, etc.
  - Environmental classes/education as special interest topic not general education requirement.

Information about the class

- **Level 6 (upper level)—more flexibility and expected emphasis on critical thinking**
  - Offered annually since 2014
  - Small classes: 5–10 people—requirement for environmental studies students.
  - Prerequisites (introductory ES courses) were removed a few years ago.
  - Study abroad American students and Greek students bring a variety of perspectives (disciplinary and cultural)
  - Instructor’s background: intercultural; interdisciplinary (Biochemistry, Environmental policy, Sociology), alternative approach to assessment in her HEd background
- **200-level Economics elective course—open to Sophomores and above.**
  - Taught annually since 2004
  - 20/25 students
  - Two prerequisites: Introductory Macroeconomics and Microeconomics (limit students’ eligibility to take the class).
  - Class is cross-listed with the Environmental Studies program which allows for a more diverse group of students to take an economics class. Gives rise to an exchange of ideas from different perspectives.
  - Instructor’s background: intercultural background (French and American); interdisciplinary training (Economics, Culture Studies, Environmental Studies)
4.2.1. ECON 202: Environmental Sustainability and Economic Growth—Denison University

The course originated as an introduction to the new field of ecological economics, which contends that the myopic view of mainstream economics (focused on the optimization of individual actions) contributes to the lack of progress in addressing some of the pressing issues of the 21st century [48], such as climate change, biodiversity loss, resource exhaustion, etc. In its stead, ecological economics promotes the development of systemic thinking, integrating multi-disciplinary knowledge from the geosciences (Anthropocene), ecology (planetary boundaries), physics (law of thermodynamics), political science (environmental justice and ecological citizenship), sociology and economics (growth, de-growth, a-growth, buen vivir movement), philosophy and psychology (capability approach, happiness research), etc. It recognizes the impact of human (economic) activity on earth systems and highlights, in particular, issues of scale and distribution.

The course follows the principles and precepts of ‘education on, in and for’ sustainability laid out in Section 2. In particular, it relies on problem solving, individual/society power connections, integrative and systemic thinking and project-based learning. The course seeks to foster students’ personal transformation on all four dimensions discussed in Section 2: critical learners, empowered learners, critical and engaged citizens, and empowered citizens. However, the transformation of students into engaged and empowered citizens is, by nature, a long-term objective, as it will be realized throughout their lives, rather than as a short-term outcome of a particular class. To a large degree, the sort of critical pedagogy we advocate here can be seen as planting the seeds for future and sustained change in students’ behaviors and actions in their personal and social lives.

While several assignments are integrated in the class, three types of activities play a crucial role in getting students engaged with the topic. First, in-the-news presentations require students to discuss recent sustainability-related topics from the media. While this is designed to ensure that students act as engaged learners and informed citizens, often students go above and beyond the assignment by bringing up information they have found without being prompted as they develop emotional engagement with specific issues. Second, student-led discussions empower students to ‘own’ their knowledge and to participate in the process of social learning in a more democratic environment. Finally, the ultimate assignment is a group presentation (and an individual essay). The projects, which can be local and practical (e.g., reusable dishes in dining halls) or global and theoretical (e.g., carbon mitigation without carbon pricing), place a strong emphasis on problem-posing in a social context (i.e., what is the social relevance of the particular issue that is being investigated) and the creation of knowledge for problem-solving. Students are often eager to offer solutions; thus, this assignment gives them a chance to reflect on potential solutions and their limits, given current institutional arrangements.

4.2.2. ES 4017—Environmental Justice, Deree–American College of Greece

The course introduces the concept of social inequalities and how these relate to environmental problems and policy making. It aims to make students aware of the power relations in society and their significance for environmental problems, both in their creation and in the effectiveness of proposed solutions. It highlights the existence of different environmental realities for different groups of people, aiming to make students critical thinkers and socially aware future policy makers with political acumen. It aims to promote systemic thinking and a critical approach to technological solutions, as many environmental technological approaches fail due to the lack of understanding of the socio-political context. It is designed to engage students in all its aspects (including instruction), to incite students to take responsibility for their learning (critical and empowered learners), and to prepare them for being effective and constructive citizens and policy makers (critical and empowered citizens).

The first (formative) course activity requires students to find something—visual (e.g., cartoon, or video) or written (e.g., popular article)—that, according to them, reflects what environmental justice is. These then constitute the beginning of the discussion on what environmental justice is and relevant theoretical approaches. This exercise aims to mobilize students’ emotions and unveil students’ initial knowledge and understanding. A second activity planned early in the course of the semester is a
walk in the nearby neighborhoods. During this visit, students are called to observe how the urban environment circumscribes people’s lives, providing opportunities (e.g., housing type, athletic facilities, availability of parks) or posing obstacles (e.g., small sidewalks with obstacles) which are different for different groups of people (e.g., for people with special mobility needs, women with toddlers). In addition to increased awareness in their daily lives, this activity reveals how the concepts and theories discussed in class are relevant to their own lives. Later in the semester, students are assigned responsibility for lesson preparation and class facilitation (based on the provided weekly readings and potentially additional ones that the student has selected), completely altering the dynamic of the class—students become teachers/leaders of the class for one session—and thus empowering students in the context of their collective learning process. A final, longer trip to the center of Athens towards the end of the semester allows students to apply what they have learned in their own environment and deepen their understanding of the close relation of systemic forces and people’s everyday life (sociological imagination). This course, with its structure, reveals how learning is a process and it is achieved in the most effective way in context, either of students’ lives or of real problem solving (relevant learning). The course also emphasizes that learning is enhanced when it occurs in interactions, especially interactions in which the learners have responsibility. As an example, in a recent iteration of the course, students participated as a group (along with other Environmental Studies students) in an activity and hackathon competition (Athens Climathon) regarding possible enhancements of the use of urban green for climate change adaptation in the Municipality of Athens, organized by the Municipality and environmental NGOs. Climathon was open to anyone interested. Participants—in groups—talked with the different experts and employees of the Municipality of Athens that were present and, with the support of a mentor, collaboratively worked to propose a method for the maintenance and enhancement of urban green in Athens. Participating groups’ proposals were presented at the last section of the event and one was selected as the best. The Deree group received the first award.

4.3. Instructors’ and Students’ Views

Information about the design of the two courses (i.e., instructional goals and objectives, pedagogical methods, activities, assessments), revealing the instructors’ original intentions and efforts to match those with instructional and assessment methods, as well as challenges faced, is provided in Table 2. Furthermore, the table presents instructors’ views on achievements and shortcomings of the two courses. Table 3 summarizes instructors’ thoughts about the achievements/strengths and the obstacles/weaknesses of the two courses.
### Table 2. Course design of ES 4017 and ECON 202.

<table>
<thead>
<tr>
<th>ES 4017: Environmental Justice (Deree–American College of Greece)</th>
<th>ECON 202: Economic Growth and Environmental Sustainability (Denison University—USA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructional Purpose/Goal</strong></td>
<td>Preparation of critical/engaged citizens that can then become active–empowered citizens in the future.</td>
</tr>
<tr>
<td>Preparation of environmental experts/policy makers that are knowledgeable of power dynamics–social inequalities and understand their relation with environmental issues; that understand their significance in effective approaches towards sustainable societies; and that are interested in considering them in their professional life.</td>
<td>Preparation of empowered learners and critical citizens. Assisting students in engaging on a path towards empowered citizenship.</td>
</tr>
<tr>
<td></td>
<td>Empowering students to reflect critically upon their knowledge of economic systems and power dynamics, to engage with the structural and individual changes necessary to foster sustainable societies and to act as agents of change in their future civic and professional lives (as corporate, NGO, public sector leaders, etc.)</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Critical understanding of environmental problems and solutions/approaches</td>
</tr>
<tr>
<td>Understanding that the transition to sustainable societies is to a large extent a social–political–ethical issue</td>
<td>Critical analyses of current paradigm in economics, of growth impetus behind economic policies and of hegemony of neoliberal ideology</td>
</tr>
<tr>
<td>Co-responsibility of class/co-creation of knowledge in order to develop other skills needed for social action (communication, leadership, responsibility, etc.)</td>
<td>Understanding of impact of human activity on earth systems: structural and individual approaches</td>
</tr>
<tr>
<td><strong>Pedagogical methods</strong></td>
<td>Critical pedagogy; experiential learning</td>
</tr>
<tr>
<td>Interactive discussions; engaged learning; critical discussions of readings</td>
<td>Critical pedagogy</td>
</tr>
<tr>
<td>Flipping the classroom: changing dynamics of class (instructor as facilitator; students as instructors for some class sessions)</td>
<td>Interactive discussions, lectures and labs</td>
</tr>
<tr>
<td>Latest addition: connection with real life and community reality—participation in community problem solving</td>
<td>Student-led discussions: each student (in small groups) as instructor for a day</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td>Class discussions based on assigned literature; no ppt or lectures (only 2–3 times sharing info in the form of a lecture)—to understand concepts critically</td>
</tr>
<tr>
<td>Internet search for visuals or other materials regarding env justice (first activity)—to mobilize emotions and interest—on Bb discussion board</td>
<td>Class discussion of recent literature (guided lectures, small group discussions of key aspects of daily readings)—interdisciplinary knowledge development</td>
</tr>
<tr>
<td>Discussion of specific environmental problems/cases—to learn by applying the theory</td>
<td>Labs to analyze data and/or collect information: carbon taxation, IPAT model, ‘climate justice.’ The labs are designed to help student gather relevant data and information to construct valid arguments and collect and analyze empirical evidence to illustrate the theoretical points discussed in class</td>
</tr>
<tr>
<td>Field visit to the neighboring community in the beginning of the semester—to get sensitized to the issues and to understand relevance of knowledge/class materials</td>
<td>In the news presentations: what environmental issues are discussed in mainstream media, how are they framed/politicized?—informed and engaged learner/citizen—eliciting student interest</td>
</tr>
<tr>
<td>Field visit to center of Athens towards the end of the semester—to apply what we have discussed; to understand relevance; to consolidate the discussed concepts/knowledge</td>
<td>Group presentation: individual members of each group are responsible for submitting their own essay for their part of the presentation as their final project—collaborative work and individual responsibility</td>
</tr>
<tr>
<td>Facilitation of one class session by students (relevant to their project topic)—to consolidate knowledge and to develop leadership and teaching skills</td>
<td>Each student is assigned to a small group that leads class discussion—leadership + test of knowledge acquisition by being able to explain important concepts to peers</td>
</tr>
<tr>
<td><strong>Assessment method</strong></td>
<td>Take home exam—broken into two parts (making it a process)</td>
</tr>
<tr>
<td>Individual project-research</td>
<td>Two in-class tests</td>
</tr>
<tr>
<td>Presentation in class—combined with taking responsibility for the relevant class meeting (facilitation of class-leadership)</td>
<td>Discussion notes (daily reading notes that students draw from for class discussion)</td>
</tr>
<tr>
<td></td>
<td>Group presentations with final individual essay</td>
</tr>
<tr>
<td></td>
<td>Lab write-ups (Excel)</td>
</tr>
</tbody>
</table>
Table 3. Instructors’ view of achievements, challenges and obstacles.

<table>
<thead>
<tr>
<th>Table 3: Instructors’ view of achievements, challenges and obstacles.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ES 4017: Environmental Justice (Deree–American College of Greece)</strong></td>
</tr>
<tr>
<td><strong>Strengths/achievements</strong></td>
</tr>
<tr>
<td>Class design is conducive for students developing responsibility over their learning process; co-creation of knowledge (empowered learners). Activities (e.g., cartoons, videos, news articles) that mobilize students’ emotions early on prove essential for students’ emotive involvement with their learning. Outside-of-classroom activities (walk in neighborhoods, and in Athens, participation in Climathon) connect learning with real life, making knowledge relevant and thus the learning process more enticing. Take home exam—also divided into two parts—makes the assessment a tool enhancing the learning process. Small class size conducive to this type of learning allows more flexibility in planning.</td>
</tr>
<tr>
<td><strong>Challenges/obstacles</strong></td>
</tr>
<tr>
<td>Prior student learning culture: Class organization different from students’ prior educational experience. It takes a consistent and significant effort, in the first weeks of the course especially, for students to understand what is expected. Also, as this approach pushes students out of their comfort zone, students may feel unease in the initial phase, which the instructor has to manage. Democratic classroom, uncertainty and flexibility: In a democratic classroom, there is higher uncertainty about the way the course will develop (as the instructor has less control and a more facilitating role). The balance between organization and democratic organization is more challenging. This also may be reflected on the evaluation of the instructor by the institution. Planning out-of-classroom activities: Due to the typical institutional set up, scheduling of classes in HEd is conducive to classroom-based instruction. Thus, it is difficult to organize and coordinate out-of-the-classroom activities. Furthermore, procedures relating with students’ safety outside of campus accentuate this difficulty. Assessing learning as a process: HEd assessing method is generally geared towards assessment of learning outputs (learning objectives). This trend is emphasized with increased standardization and it is not conducive to empowerment of students as learners and citizens.</td>
</tr>
</tbody>
</table>
In Table 4, students’ qualitative comments are presented regarding the educational praxis in the two courses and their perceived impact on students. To the open question “Which aspects of the course and/or the instructor did you find effective in relation to your learning?” of the course evaluations, students offered their comments, presented in Table 4, which are organized in relation to the four dimensions of personal transformation [25]: learning for individual change, for empowerment, for integration, for social transformation. As Marouli et al. (2018) [25] have indicated, these correlate with goals regarding the learners: individual change implies critical learners, empowerment leads to empowered learners, the ability to integrate theories and practice is required for engaged citizens, and social transformation is possible with empowered citizens. So, Table 4 not only presents students’ comments but also offers a tool for the further discussion of the effectiveness of each course in guiding students on a transformative path.

### Table 4. Students’ responses categorized by course and four dimensions of personal transformation.

<table>
<thead>
<tr>
<th>Instructional goal</th>
<th>ES 4017: Environmental Justice</th>
<th>ECON 202: Economic Growth and Environmental Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual change/critical learners</strong> (involved in critical thinking, knowledge creation; dialogic classes, instructor as facilitator)</td>
<td>Regarding critical thinking and co-creation of knowledge via an interactive discussion format and instructor as facilitator: “The materials were covered through discussions, which helped in critical thinking, and had an effective learning outcome” (2016); or “The class discussions were very effective as well as the delivery of the professor” (2016); or, “I really liked the fact that we were able to cover class material outside the class, allowing class time to be used more effectively” (2018); or, “She [the professor] challenged us to think outside the box”. Another student appreciated the discussion of “multiple perspectives” (2018).</td>
<td>Non-conventional pedagogical approach within economics: “This course was very different from any other economics course I have taken because it deals outside of classical neoclassical economics and the assumptions that go along with efficiency and market allocation… I felt that at times the course, for being listed as an economics course, was at times focused more on verbal concepts than models” (Student A, ECON 202, Spring 2010).</td>
</tr>
<tr>
<td><strong>Empowerment/empowered learners</strong> (systems thinking, ‘personal is political’, sense that you can cause individual and social change)</td>
<td>One of the aims of the course is learners that are empowered to create knowledge and take responsibility for their learning process. Several students appreciated the “opportunity to facilitate a class meeting” (2016, 2017) and understood its value. A student stated: “…it allowed for students to take a leadership role that helped us all learn and become comfortable with the material” (2018). Other students’ relevant comments: “It was important for us as students to carry responsibility for the classroom environment. Ideally that makes the classroom space better, as we are prepared and already knowledgeable as we enter the classroom space, and the class discussions are a place to further knowledge” (2017); or “…[the professor] challenged us to take our learning to the next level” (2017). The development of students’ ability to connect personal experiences with the socio-political reality is another aim of the course. “Also the two field trips we took (walk in Athens, participation in the Athens Climathon) were very interesting… As students, we get a much more deep understanding of the concepts” (2018).</td>
<td>One of the aims of the course is for students to link current systemic issues with individual behavior: “The course truly made you examine yourself and your behavior” (Student E, ECON 202, Fall 2015). “This class did something that few other classes at Denison can do, it can take current events, news articles and apply them to class discussions, and I think that makes it that much more challenging when the issues are very real” (Student F, ECON 202, Fall 2017).</td>
</tr>
</tbody>
</table>
While each element of the critical pedagogy that informed our course design contributes to the development of students along these four dimensions, we do not contend that any particular element of pedagogy corresponds to a specific dimension of personal transformation. Consequently, we reflect on the success (and shortcomings) of this pedagogy holistically. It appears that students, after their initial discomfort (the initial challenge to move from passive or semi-passive receptors of knowledge to active agents in the teaching and learning context), sincerely appreciated the courses.

Over the years, students also offered some critical comments regarding the courses and suggested some possible amendments. Their comments are summarized in Table 5.

### Table 5. Students’ responses regarding course shortcomings and possible amendments.

<table>
<thead>
<tr>
<th>Critiques and proposed amendments</th>
<th>ES 4017: Environmental Justice</th>
<th>ECON 202: Economic Growth and Environmental Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workload: “The three-take home exams along with the final project were very demanding for completing the course.” (2016)</td>
<td>Reading difficulty: “This course could be more clear cut. I feel like the reading was too difficult, and for someone who did not have any idea about the environment, it was a little over my head. I feel like less dense reading, and a better understanding would have helped this course.” (2010)</td>
<td></td>
</tr>
<tr>
<td>&quot;Not so much material to read and prepare from one class to the other.&quot; (2017)</td>
<td>Outside of classroom engagement: “Perhaps include a trip to see or have Denison host a speaker that is active and prominent in this field.” (2015)</td>
<td></td>
</tr>
<tr>
<td>Assessments: “Fewer big assignments, more smaller assignments.” (2016)</td>
<td>Social imagination: “At times our task seems utterly disheartening, we’re attempting to fix a world that, in all likelihood, is headed down the toilet. However, (the instructor) always keeps issues on an even keel and navigates the subject matter, although at times quite bleak, in a lighthearted way.” (2015)</td>
<td></td>
</tr>
<tr>
<td>Class environment: “I think that part-lecture/part-student discussion is needed. Lots of times students don’t do the readings and we spent class summarizing. The lack of total accountability has been a theme here a bit—so I’m not sure what to do about it.” (2017)</td>
<td>Accessibility: “I think this course would be extremely beneficial for ENVS majors to take, but this semester I was the only student from that department to take it, possibly because of the requirements” (2013)</td>
<td></td>
</tr>
</tbody>
</table>
In 2016, one ES 4017 student commented that three exam questions (given at different times in the semester) were too many. This comment has been considered in the assessment design of future iterations of the course; now there are two take-home exam questions. Further redesign of the assessment strategy—to include several smaller assignments—will be considered with the next validation of the Environmental Studies program, as such changes require prior approval from an external validation body. Workload and student accountability remain issues that need to be continually negotiated in each iteration of the course, as they relate to the prevalent student culture in Greece. In ECON 202, in response to the difficulty of the material for some students, the instructor now starts the first few weeks of teaching by introducing accessible reading on environmental-studies related themes to ensure that everyone has a similar knowledge base (no similar comments have been received since 2010). In fact, students are more likely to comment as follows: “I also really liked the diversity of materials we used (i.e., journal articles, academic publications, videos, etc.)” (2017). The student comments regarding the bleak nature of unsustainability have been addressed by including a more intentional positive framing to the class (focusing on problem-posing and problem-solving, although highlighting the realistic nature of our current unsustainable development paths remains paramount in order to motivate intellectual and action-oriented engagement). The limited outside-of-classroom engagement and the impact of curricular prerequisites remain issues that are more difficult to solve, but upon which the instructor focuses with every iteration (including speakers, allowing certain students to enroll in the class without the prerequisites, after a careful review of their academic background to ensure that they will not be overwhelmed by unfamiliar theoretical models).

4.4. Reflections: Lessons from the Case Studies

4.4.1. Course Design for Individual and Social Change

The authors consider the courses successful as they appear to effectively mobilize students to engage with their learning and social issues. Students were responsive to the elements of critical pedagogy [25,49] offered in both courses. Both courses sought to not only cultivate critical thinking but also critical engagement with real life issues [25]. In general, students showed commitment to becoming engaged learners and citizens, and, thus, to moving beyond an instrumental view of education (as skills acquisition and/or training for a first job). The desire to learn and to become agents of change ought to be part and parcel of HEd. Yet, it is telling that students comment on finding the courses interesting because they were significantly different from their previous classroom experiences at both institutions. This is in no way a comment on the quality of the education they receive (which is excellent, given our institutions’ dedication to the liberal arts), rather it is a comment on the lack of interdisciplinarity and experiential learning to which students may need to be more systematically exposed in order to fully comprehend the world in which they live. It is even more troubling because the commodification of knowledge and neoliberal rules of governance in HEd emphasize the segmentation of learning, and thus tend to marginalize efforts that encourage systemic thinking.

**Individual change:** Both courses aim to cultivate critical thinking and lead to individual change; students’ comments in both courses reiterated that. Both courses aimed to challenge the dominant discourse in the field. ECON 202 provided an alternative approach to economics that can effectively lead to an alternative economic system that can support environmentally sustainable societies. ES 4017 aimed to make Environmental Studies and other students aware of the significance of the socio-political context in the generation and the solution of contemporary environmental problems. Also, ES 4017 changed the class dynamics asking students to take responsibility for their learning and participate in a collective process of creation of knowledge. Dialogic classes were used in both classes, and students’ comments demonstrate their appreciation of this pedagogical approach. It is noteworthy that students themselves indicated explicitly that interaction helped learning. It is interesting that a student of the “Environmental justice” class highlighted the passion of the professor as something positive: “She is a great discussion leader and is very passionate about environmental justice and teaching and you can
tell” (2017). This can be interpreted as an indication that feelings—even as a reaction to the instructor’s expression of emotive aspects of the instructional process—are engaged in the learning process.

**Empowerment:** Both courses also aim to the empowerment of students as learners. One of the aims of both courses is for students to cultivate systemic thinking. ECON 202 emphasized guiding students to link current systemic issues with individual behavior. Students appreciated the use of real contemporary issues for analysis and noted that the course made them reflect on their behaviors, an indication that they started developing systemic thinking. ES 4017 used a learning process that involved students as leaders and co-creators of knowledge and students indicated that this responsibility helped them learn better, appreciate their level of knowledge and further their knowledge in class. Connections between individual realities and the socio-economic system are a main issue in this course and, for this reason, students were asked to reflect on the socio-spatial realities of their lives and Athens in general via field trips and other community activities, like the participation in the Climathon event and competition. Students indicated that field trips helped them gain a deeper understanding of the concepts. An ES 4017 student asked for more case study discussions in the class, highlighting the significance of opportunities to apply theoretical knowledge to real situations.

**Integration:** Both courses seek the integration of different disciplinary knowledge, but also seek input from lay knowledge as well. ECON 202 builds on daily news stories, while ES 4017 explicitly and extensively discusses the significance of lay people’s knowledge and the implications for environmental research methods and the policy making process. The investigation of local and global connections is a main axis of both courses. In ES 4017, multi-scalar (at the local, regional, international, global levels) analysis is often used and its power to reveal—through discussions of different environmental issues and cases—different aspects of the issue is highlighted. Integration of experience/practice and theory was a main concern of ES 4017; field visits or other practical activities aim to integrate experience with theory, and thus enrich understanding, relevance of knowledge and interest in the topic beyond the classroom. Students acted as engaged citizens, especially via the Climathon event organized to assist the Municipality of Athens. Students appreciated that the instructor probed them to apply their knowledge in real situations. Integration was a main aim of ECON 202 as well, but the emphasis here was integration of different bodies of knowledge, both theoretical, scientific knowledge and knowledge of contemporary issues. Students indicated that the course was effective in helping them critically examine how these intersect. ECON 202 provides a concrete example of the integration of multidisciplinary knowledge to analyze a central issue of the 21st century (sustainability). This probably explains why students remark favorably on this outcome of the class.

**Social transformation:** Both courses do not systematically expect students to act as active citizens—i.e., acting to address some social/environmental problem—at the time they take the courses themselves. The courses are conceived as effective preparation for future active, socially and environmentally responsible citizens and practitioners, promoting a better understanding of the socio-political context and cultivating a sense of social responsibility. Social transformation and empowered citizens constitute long-term goals for the two courses. Courses can provide the stimuli and opportunities for students to realize their power within the social system and hopefully, mobilize their interest in becoming active citizens in the future, unless they are specifically designed around action research around community issues.

ECON 202 students responded positively to the EE-oriented nature of the course by arguing that their peers should be engaged in similar courses. An ECON 202 student indicated that all students should critically engage with environmental issues and sustainability in real life. Regarding ES 4017, a student stated that this course helped him/her become better “all around” and connected this with the course activities that ask students to apply their knowledge to real situations. This may be an indication that he/she is more ready to take action for a better world in terms of socio-environmental concerns. Furthermore, the organization of the class in a more democratic way, with shared responsibility, prepares students to become empowered citizens. The leadership skills that students develop in the effort to lead a class meeting in a way that will constructively engage students are useful for future
engaged citizens too. A former student of Deree, after graduating from the Environmental Studies program and starting his Master’s degree, came back and indicated that the ES4017 course had a significant impact on him and was instrumental in his selection of graduate studies that relate with environmental policy making. This is probably a safer indication that this course is effective—at least to a degree—in preparing empowered citizens (i.e., citizens prepared to act for the transition to sustainable societies).

4.4.2. Challenges

Effective as these courses may be, they face noteworthy challenges. Firstly, a democratic classroom cultivates empowered learners, but not necessarily engaged or empowered citizens. It provides some leadership skills that can be transferable to social situations if other approaches stimulate students’ interest to become active/engaged citizens. Secondly, critical engaged citizens need systemic thinking and sociological imagination—an understanding of the social roots of individual problems. Empowered citizens need also political acumen and leadership skills that can be developed in real life situations (not only classroom settings). Preparing empowered citizens with these capacities, ready to take action in order to bring about social change for sustainable societies, needs contact with problem posing and solving in real life situations. However, as the organization of such out-of-the-classroom activities is challenging, the instructors of the two courses either avoided them or organized some of them as isolated incidences and only indicative experiences in the context of the course. Thirdly, a semester course is too short a time for unlearning long-entrenched patterns of learning and behaving. A semester course can only stimulate a self-changing process that can motivate students to later become caring, critical/engaged and empowered citizens. And finally, participation in real social problem solving requires effective preparation and significant time commitment from students, something difficult in the present educational setting. For instance, the Climathon event was very interesting but, given that it required students’ long-time commitment outside the classroom, several students’ participation was limited.

Furthermore, students’ instrumental view of their education in a world of limited career opportunities is another big challenge. This reality is augmented by the increasing standardization of Higher Education, which leads to the devaluation of learning as a process rather than an outcome/output. In this context also, students’ management of their time becomes more challenging, as they tend to gear it towards skills and credentials development.

4.4.3. Significance of the Socio-Economic Context

Our courses are in line with HEd’s traditional goal to prepare individuals to become agents of creativity and constructive change in their own lives and in their broader communities, as they help students develop critical thinking, and become capable of posing challenging questions, and socio-political acumen that can lead to the needed personal and social transformations towards environmentally sustainable societies. These skills however are not readily marketable, as knowledge workers are mainly required to have the capacity to aptly and efficiently resolve problems that someone else poses. For this reason, students take courses such as ES 4017 and ECON 202 either because it is a requirement in their program of study, or out of personal interest in the topic, or for practical reasons (e.g., that the course fits their schedule well). ES 4017 is attended primarily by students of the Environmental Studies program, which attracts a small number of students amid the Greek economic crisis. Career-oriented educational choices based on an instrumental logic are characteristic of Greek students who face very limited and uncertain future job opportunities. ECON 202 has an enrollment of about 25 students who choose the course out of personal interest. Due to its two prerequisites (introduction to macroeconomics and to microeconomics), it is relatively inaccessible to students outside of Economics or Environmental Studies.

Both courses aim to the problematization of mainstream knowledge and alternative thinking, a skill that can be considered valuable in the knowledge society, which capitalizes on innovation.
Indeed, the ability to think “outside the box” is advertised as a valuable skill in the contemporary job market and knowledge society, which primarily look into technology and science for solutions to environmental problems. Thus, HEd institutions should welcome these courses as courses that signal their cutting-edge approach to knowledge. However, the economically desired innovation is generally akin to amendments to the existing system, not to radical changes in it. Thus, while HEd institutions welcome such courses, they do not necessarily provide a favorable context for them. Alternative courses like ES 4017 and ECON 202, which adopt a critical pedagogy as well as an experiential approach in the context of real social problems, require a flexibility which goes beyond the traditional divide between HEd and communities and the accompanying time efficiency concerns that guide HEd course scheduling conceived as in-class instruction (fragmented in specific time slots). Organizing out-of-the-classroom educational activities requires scheduling flexibility as such activities require more time than the usually planned 50–80-minute-long class duration, leading to conflicts with preceding or following courses. Issues that arise from the organization of out-of-the-classroom activities are resolved among faculty members themselves on the basis of individual agreements between instructors of relevant courses. Furthermore, taking students out of campus requires several bureaucratic procedures to ensure that, in case something goes wrong, the HEd institution is not liable for students’ safety.

In the contemporary neoliberal context of knowledge societies, standardization of knowledge is a main concern in HEd today. Assessment design is considerably affected by the requirement for standardization. Designing alternative assessments that can document the success of the learning process—not outcomes—remains a big challenge in an educational context that seeks measurable and standardized outcomes. In the present context, it can only partially be with individual instructors’ resources and efforts. Furthermore, as competition is a prime value in the market, so it is in the educational system. A cooperative classroom, based on collaboration between students, or between instructors, or between instructor and students, is not easily conceived in this social context. Thus, an alternative organization of the class—more democratic, requiring collective responsibility, like ES 4017 and ECON 202—collides with students’ educational habits, and requires that the instructor clearly presents the class design and expectations right from the very beginning of the course, and that s/he unwaveringly implements this new pedagogy until students get “educated” into the new type of class requirements and the new learning context.

5. A Framework for Transformative Education for Pro-Environmental Behaviors

5.1. Thoughts for Effective Course Design

We are at a point in history where it is generally accepted that significant changes are needed in environmental individual behaviors and social practices. EE/EfS initiatives have a very important role to play and they need to be effectively aiming towards engaged and empowered citizenry. This pedagogical goal has implications for course design, including pedagogical methods, instructional/learning activities and assessment methods. Jickling and Wals [4] and Marouli et al. (2018) [25] have offered very useful insights that can support such efforts. The instructor’s (and students’) view of knowledge (transmissive or transformative learning) informs his/her perception of the instructional purpose. The form of the learning process (authoritative/deferential learning or participatory/active citizenry) reflects this epistemology but also affects the learning outcome. We propose that, for a class that aims to help the transition to sustainable societies (i.e., in the transformative side of the spectrum), a clear reflection on the targeted educational goal—critical learners, empowered learners, critical/engaged citizens, or empowered citizens—is needed. Course design can then be more masterfully prepared. As the discussion of the two cases revealed, the institutional and structural/cultural context plays also a significant role in course design and transformative potential. It is the opinion of the authors that EE-oriented courses should not be dealt with as special interest courses, but as general education courses that all students should take (we do not advocate for every student to pursue a major in
environmental studies/science). One cannot possibly understand the world in which one lives without some degree of engagement with human beings’ and societies’ relationship with the systems that are crucial to life on planet Earth. The hyper-focus on specialized, individualized, and commodified knowledge in the context of neoliberal governance rules obfuscates this fact and prevents institutions of higher learning from fulfilling their transformative role in society.

Below (Figure 2), we propose a framework for the design of transformative EE/EfS courses in contemporary societies.

<table>
<thead>
<tr>
<th>Transmissive learning</th>
<th>Transformative learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimension</strong></td>
<td><strong>Goal</strong></td>
</tr>
<tr>
<td>Instructor role</td>
<td>Expert</td>
</tr>
<tr>
<td>Instructional design</td>
<td>Authoritative classroom</td>
</tr>
<tr>
<td>Pedagogical methods</td>
<td>Interactive discussions</td>
</tr>
<tr>
<td>Assessments</td>
<td>Measuring output</td>
</tr>
<tr>
<td>Context – Higher Education institutions</td>
<td>Disciplinary expertise</td>
</tr>
</tbody>
</table>

**Figure 2.** Framework for transformative learning in contemporary societies.

The framework identifies selected dimensions—i.e., instructional goal, instructor’s role, pedagogical process, assessment method and HEd/institutional context—as being significant to promote (individual and social) change. As indicated in Figure 2, the transformative potential increases as the educational initiative is located closer to the right side of the figure, along each one of these dimensions. Of course, the different dimensions interrelate as well and incongruence between them (e.g., one of them being closer to the transmissive–authoritative side) will minimize the transformative potential of the whole effort.

A democratic classroom is one in which the instructor acts as a collaborator and all participants (students included) are co-creators of knowledge. Even though students find it difficult, at first, to take responsibility for the learning environment and their learning process, as soon as they understand expectations, they appreciate this approach. A more democratic classroom is a fertile ground for critical thinking and engaged learning, providing a supportive environment for students to create knowledge. Interactions and collaboration help this process. Student-led discussions are especially useful for cultivating social responsibility and leadership skills, as well as ownership of the learning process.

Initial activities that can mobilize emotion are very useful. Activities that generate emotive learning (e.g., search for cartoons, videos, search for and reflections on contemporary news stories) in the first weeks especially are effective in mobilizing emotions that can stimulate interest for investigation beyond the required learning (and even action if an opportunity arises). Students’ desire to go above and beyond the required assignments (e.g., in ECON 202) by sharing their own findings and stories is a testimony to their emotional engagement with the course’s topics. Students’ comments also indicate that the instructor’s emotional engagement with the topics of the course can entice students to get emotionally involved with the learning process, too. Generally, emotive learning activities (“in the environment”) should be reintroduced in the learning process, and our “objective” learning courses.
Furthermore, learning activities outside the classroom that underscore the relevance of acquired knowledge to real life and real social problems, dilute the divide between Higher Education and social communities, and make the learning process more enticing and the gained knowledge (probably different for each learner) more long-lasting. In addition, activities in real social settings motivate students to apply their knowledge to society, aiming to resolve real social problems; this also gives them invaluable knowledge and socio-political capabilities, which are needed for social transformation. Such experiences may also lead them to consider how they contribute to the maintenance of the status quo and/or how they can effectively contribute to the transition towards environmentally sustainable societies.

Assessment methods also need to be adjusted in order to facilitate the conception of learning the course aims to promote: as a process that is based on democratic and collaborative interactions, targeting individual and social change. Take home exam questions are an effective twist on the traditional exam approach which allows both assessment of output and collaborative preparation if students so choose. Furthermore, the breakup of the take home exam into two parts, one question offered in the middle of the semester and the second one at the end, makes the assessment a process itself, allowing students to enhance their exam-taking, analytical and synthetic skills, as well. It is interesting to note that a student suggested “fewer big assignments, more smaller assignments” as an enhancement for the course. This approach is more akin to learning as a process.

The institutional context is also significant. The more a HEd institution systematically strives to be sustainable itself—involving close collaborations between faculty, administration and students in its efforts to minimize its environmental footprint and to be socially responsible—and the more it organizes itself to facilitate and encourage collaborations with communities on resolving real problems, the more effectively it can support transformative educational initiatives for healthy environments and better societies.

5.2. Challenges and Needed Institutional Adjustments

The implementation of EE-oriented courses such as ES 4017 and ECON 202 faces significant challenges that will require many of the current structural and cultural arrangements within HEd institutions to be rethought. Below are some ideas drawn from the two case studies discussed above. Our sentiments are well captured in the following quote: “Simply put, while many university faculty and leaders may be prepared to discuss changes in the name of the sustainability revolution in higher education, they remain seemingly unable to acknowledge the many ways that these state- and corporate-sponsored institutions of learning continue to promote unsustainability in structures, processes, and the epistemological assumptions underlying the meaning of a university education. … But if we are to see a real change in direction, people within the university system need to confront the contradictions and the gaps between sustainability rhetoric and serious attempts to retrofit and reimagine the institution for the coming decades” [50] (p. 219). Below, we offer reflections on five main areas that would help in designing and implementing EE-oriented courses.

5.2.1. Democratizing Learning

Students have been educated to be passive recipients of knowledge from experts. They need to unlearn this habit, and to be supported to take responsibility for their learning, even if this may lead them to “routes” with which the instructor is not in full agreement. Democratizing the traditional teacher–student relationship and expecting students to come prepared for class in order to participate as equal partners in knowledge creation or even leaders, presupposes that students take responsibility for the teaching and learning praxis and have done the readings for the week. This is a challenge in contexts where the prevailing student culture wants students to generally intensify their studying before the exams. Because of such a culture in Greece, sometimes students (depending on the cohort) do not come prepared to class, as one student’s comment regarding “lack of accountability” reveals. Given that democratic classrooms and interactive discussions require the active involvement of students
in meaningful discussions, unprepared students may significantly compromise the effectiveness of such an approach. Thus, a systemic change is needed in HEd, cultivating students’ responsibility over their learning throughout their student career. This should be related with a change in classroom dynamics, through a more democratic class organization; the spatial arrangement of the classroom to foster student-to-student interaction; and the assessment method, which should evaluate process rather than output.

As these courses are explicitly designed as a dynamic setting, dependent on students’ response and involvement, course design becomes itself a continuous process, adjusted throughout the semester. The uncertainty of such a democratic classroom setting is sometimes unsettling for the instructor him/herself. Maybe, instructors’ training programs should more effectively prepare them for such dynamic educational settings.

5.2.2. Course Design and Flexibility—Rethinking the Classroom

The time organization in Higher Education is very tight, suitable for instruction inside a classroom that is located near other classrooms where students take courses before and after. This time organization makes it challenging—sometimes impossible—to organize effective learning activities outside the classroom. Connecting the class activities with real social/environmental problems outside the classroom implies a different organization of class time; it cannot be so regular or confined to the assigned class time-slot. A more flexible organization of the schedule of classes is required, as out-of-the-classroom activities usually take more than the allotted single class meeting time.

Within the present context, a large class size (e.g., ECON 202) renders the logistics of outside-of-the-classroom experience difficult. The instructor is asked to find inventive methods to surpass existing practical obstacles (e.g., working on on-campus projects). Beside the class size, planning and organizing learning experiences in real life situations (outside the classroom) is very time consuming and is rendered difficult, even impossible at times, by the organizational requirements of the university (e.g., safety rules, scheduling of classes in specific time slots). Students participate more readily in required/graded activities. Participation in activities that are outside the scheduled class meetings—especially if they are only formative (not graded)—is a challenge.

Also, given that real problems are complex, multi-disciplinary approaches may be needed; thus, collaboration between courses and instructors is useful or may even be necessary. This requires educational structures that support such approaches [51]. A word of caution: designing such courses require more preparation time in the beginning and throughout the semester.

5.2.3. Sociological Imagination “in Service”

The educational praxis should help learners understand the hidden but real connections between private troubles and public issues, i.e., the socio-political causes of individual problems [30]. Starting from students’ experiences helps this process. Systemic—rather than micro-focused, fragmented or highly specialized—thinking should be a central concern in the learning process. Systemic thinking goes beyond the integrative approach that EfS has advocated; integration may be sought without full understanding of the workings of the social, economic and eco-systems. It can be primed by assigning accessible tasks with which students can emotionally engage in order to mobilize their ‘imagination.’ As explained above, multidisciplinary approaches relying on collaborative effort among faculty from different disciplines (on campus, or virtually by connecting with instructors in other countries) are more conducive to the sort of learning that can connect the I and the we; the system, the now and the future; the local and the global.

5.2.4. Rethinking Assessments

Assessments in Higher Education are generally designed to measure outputs and learning outcomes. With increased standardization across universities worldwide for comparison purposes, this trend has been accentuated. At Deree, given the special context for private universities and colleges,
there is an increased emphasis on standardization, which requires that assessments are prepared before the semester starts. This renders the assessment method inflexible and extremely difficult to account for the dynamic of the specific class and learning as a process; emphasis is placed on the learning outcomes, despite the recent trend to diversify assessments. Instructors at Denison possess a good degree of freedom in crafting their assessments. However, scheduling issues, as discussed above, make the 50–80 minute exam format the standard practice, which means that, like at Deree, assessing a student’s learning process remains a challenge. Yet flexibility in assessment design exists and is an important factor in creating the type of pedagogical approach that will foster students’ personal transformation.

5.2.5. Student Culture and Career Prospects

In recent years, and especially in the context of the economic (and other) crisis and high unemployment in Greece, students have had a high sense of insecurity regarding their career prospects. Thus, they have often adopted an instrumental approach to their education, and their choice of field of concentration and of courses, with an eye to what would give them more marketable skills and “points” in the job market. The logic of choosing courses and careers because an individual finds them appealing has been undermined in this socio-economic context. Yet, emphasizing the crucial skills developed in collaborative courses such as ours, which may help students transition more easily into the workplace after college (teamwork, analytical and leadership skills, etc.) may help make EfS classes attractive to students and garner institutional support, while keeping the commitment to critical pedagogy.

6. Conclusions

Environmental Education (EE), and later Education for Sustainability (EfS), were conceived as a tool to promote environmental protection and to envision the transition towards societies that would be in balance with nature and that would provide quality of life for their participants. Given this goal, EE or EfS initiatives overwhelmingly rely on integrative and interdisciplinary approaches, but also on action research and real problem solving. In the contemporary neoliberal context of knowledge societies that depend on fragmented expertise, specialized knowledge has become both the main currency and a commodity to be sold and purchased in the market; thus, standardization of knowledge has become a main concern in Higher Education (HEd) today. This concern is often at odds with the integrative, interdisciplinary and collaborative nature of EE and EfS courses. In this context, in practice, the transformative potential of EE/EfS efforts in HEd has been blunted. The focus on individuals, skills development and the production of scientific and technological innovation in HEd fosters incremental adjustments to the system rather than radical changes.

Indeed, in order to facilitate a transition to sustainable societies—i.e., societies focused upon quality of life, healthy and sustainable ecosystems, and socially-oriented and viable economic activities—EE/EfS initiatives in HEd that effectively support this radical transition are needed. Such efforts, as the discussion of our two case studies in Greece and the USA has revealed, should promote integrative systems thinking; the ability to see the connections between private troubles and public issues/social problems and individual actions; more democratic and flexible classroom settings that promote participatory learning processes; an increased emphasis on the learning process rather than the learning output (reflected in the assessment design); as well as the connection of HEd with real social problems, aiming for action research and real problem posing and solving in collaboration with relevant communities. Consequently, changes in HEd are also needed in order to provide a supportive environment for such courses and a radical re-envisioning of society. As UNESCO [3] indicate: “Now, more than ever, education has a responsibility to foster the right type of skills, attitudes and behavior that will lead to sustainable and inclusive growth.” We argue that institutions of HEd should not reinforce neoliberal discourse, and in particular its self-entrepreneur narrative that is detrimental to the collective approaches that are necessary to disengage from unsustainable practices. Universities and
colleges should continue to empower students to become autonomous thinkers and agents of change for the common good.

What we retain from our experience in the classroom is students’ willingness and desire to engage with issues that are ‘wicked’ (without easy solutions). The current political climate (2019–2020) in the US and the Western world as a whole, characterized by a widespread critique of the current model of globalization, and impacted by a multifaceted crisis—environmental, economic and social (albeit taking different forms in different countries)—may be propitious to students’ understanding of the hidden but real connections between private troubles and public issues, i.e., the socio-political causes of individual problems. This may lead to their reflecting upon new ways to organize socio-economic relations in order to embark upon less unsustainable paths. This may be a prime time for EE to play its transformative role in higher education, especially in the Western world.

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