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This series focuses on new developments in the study of education and environment. Promoting theoretically-rich works, contributions include empirical and conceptual studies that advance critical analysis in environmental education and related fields. Concerned with the underlying assumptions and limitations of current educational theories in conceptualizing environmental and sustainability education, the series highlights works of theoretical depth and sophistication, accessibility and applicability, and with critical orientations to matters of public concern. It engages interdisciplinary and diverse perspectives as these relate to domains of policy, practice, and research. Studies in the series may span a range of scales from the more micro level of empirical thick description to macro conceptual analyses, highlighting current and upcoming turns in theoretical thought. Tapping into a growing body of theoretical scholarship in this domain, the series provides a venue for examining and expanding theorizations and approaches to the interdisciplinary intersections of environment and education. Its timeliness is clear as education becomes a key mode of response to environmental and sustainability issues internationally. The series will offer fresh perspectives on a range of topics such as:

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Bob Jickling • Stephen Sterling
Editors

Post-Sustainability and Environmental Education

Remaking Education for the Future

Foreword by David W. Orr

palgrave
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Palgrave Studies in Education and the Environment

ISBN 978-3-319-51321-8

ISBN 978-3-319-51322-5 (eBook)

DOI 10.1007/978-3-319-51322-5

Library of Congress Control Number: 2017932108

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Cover illustration: Pattern adapted from an Indian cotton print produced in the 19th century

Printed on acid-free paper

This Palgrave Macmillan imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

SERIES INTRODUCTION

Our primary goal for the *Palgrave Studies in Education and the Environment* series is to showcase new developments and advances in the scholarship of education and environment.

A key dimension of this aim is to promote theoretically rich work through contributions that include empirical and conceptual studies progressing critical analysis and practice in environmental education and related fields. In other words, as with our publishers, we expect the series to realize two outcomes: (i) advance the theoretical depth and sophistication of scholarship on education and environment, and (ii) offer critical orientations to such matters of public concern.

Why have we developed such expectations for this series?

First, there is our experience and sense of the strengths and weaknesses of existing scholarship in this area, echoed in the comments of our colleagues, mentors, and students. These raise a critical question for us: whether some of the underlying orientations of current and prevailing ways of conceptualizing and enacting environmental and sustainability education are *fundamentally limited* and *need shaking up*. This impetus pertains to both outcomes identified above, in that there is scope for broader and deeper theoretical engagement, as well as further consideration of the real implications of the scholarship for education and the environment. The series thus aims to highlight and support critical and theoretical scholarship that matters for how we live and educate in the world.

Second, to address such concerns, the series should enable readers to engage interdisciplinary and diverse perspectives on education and environment, particularly as these relate to domains of policy, practice, and research. Thus, we expect studies in this series to span a range of traditions, scales, and approaches, from the micro level of empirical thick description to the meta level of conceptual analysis and synthesis. Critically engaging with contemporary topics and issues demands high quality contributions that also both tap into a growing body of theoretical scholarship relevant to education and environment, and innovate in this space.

The series thus provides established and new scholars with both a venue and an avenue for examining the interdisciplinary intersections of environment and education, and challenging the theorizations and enactment of environment and sustainability-related education through critical, creative, and compelling scholarship.

We hope you enjoy engaging with the study that follows, and find it a fitting contribution to the series.

Alan Reid and Marcia McKenzie
Series Editors, *Palgrave Studies in Education and the Environment*

FOREWORD

The realities are these. Those of us who teach environment-related subjects, in various departments, are mostly employed in large organizations that are not wholly supportive or understanding of what we do or why we do it. For the most part we are tolerated—not always and everywhere, mind you, but mostly. We exist as outliers—a curricular out-shed behind the big house where the really important stuff happens. The reasons are many but I think they all reflect the failure of systems thinking throughout institutions of higher education. There can be no serious discussion about any environmental topic without understanding the larger system in which it is a part. In short, systems thinking is the study of what's hitched to what over what periods of time. The word “system,” I think, is the most radical word in any language because it implies implicatedness—ecological, moral, political, economic—between what otherwise appear to be unrelated phenomena. Furthermore, since we cannot know the full extent of what causes what in complex, interactive, nonlinear systems especially over long periods of time, systems thinking begins in deep humility, not as a pose or gesture, but as an honest acknowledgement of our inescapable ignorance. But the humility required to acknowledge interrelatedness and its consequences is not well regarded in rigidly structured institutions permeated with the arrogance of humanism that led us to our current predicament.¹ Instead, all knowledge at whatever scale is reflexively regarded as good even if we do not understand the consequences of its manifestation in the world, have no plan to repair any resulting unanticipated damage, and have no way to hold anyone accountable for damage at scales too large to be repaired. So we confidently rush on where Angels would fear to go and call it progress.

A second, and I think inescapable, reality is that the larger institutional structures of education—schools, colleges, universities, research institutions, and professional organizations—have grown according to the logic of total human mastery and, as Francis Bacon once put it, “the affecting of all things possible.” The results are surely mixed. But on the whole, it’s gotten us into a heap of trouble. In turn, this logic—the DNA of the system—implies toleration only for incremental changes at the margin as long as they do not threaten the existing structures of power and reputation. Again, not everywhere and always, but all too often. Further, it means that the system of rewards, incentives, promotion, hiring, firing, and funding is rooted in small questions and accordingly averse to large ones of the “emperor is naked” sort. What, for example, is the logic of creating smart and perhaps lethal robots in an overpopulated and underemployed world? Not much, but woe to the young professor of computer science who dares to ask the question or mentions the risks of what philosopher Nick Bostrom calls “super-intelligence.” An even worse fate befalls the untenured economics professor who challenges the religion of endless economic growth in a “full world,” or the need for redistribution of wealth when some 62 people have more wealth than the bottom 3.5 billion and some of whom lavishly fund institutions of higher learning. And so forth.

A third reality is that time is running out on the experiment of civilization. Climate change and the extinction of species are the surest self-portrait of industrial civilization. There is, in short, no way to read the vital signs of Earth systems with much optimism. To the contrary, they are reasons for the kind of firestorm urgency that should cause a rational species and managers of truly rational institutions to reconsider assumptions, paradigms, laws, regulations, and not the least, its manner of education and act accordingly. The deterioration of forests, waters, wildlife, and soils, however, is a symptom of deeper fault lines in our thinking and they are traceable in large measure to our manner of education that places it bets mostly on more of the same.

This leads to a fourth reality, the date of which I will arbitrarily assign to the opening of the World’s Fair in Chicago on May 27, 1933, at or near 9 am, Central Time. Until that time the world had changed at a slow, almost metronomic pace. The world’s Fair symbolized the great acceleration under the banner, “Science explores, technology executes, Man conforms.” Until recently, education was largely confined to equipping the rising generation with the skills, knowledge, and cultural information suited to that particular culture at a particular point of time. This is not to say that

nothing changed. But social, economic, and technological change occurred at a pace that could be understood, more or less, while nature changed hardly at all. The seasons came and went much as before and the human drama played out with relatively slow change in our tools, weapons, methods, goals, and with no discernible change in our fallibilities. So, a Roman farmer in, say, the time of Augustus, would have recognized his counterparts farming nearly 2000 years later. A Roman legionnaire could easily have adapted to military life as a soldier in Napoleon's wars. That is no longer the case. Our science and technology have changed beyond recognition and the Earth is rapidly shifting from the Holocene to something being called the Anthropocene. Our descendants, assuming they exist, will live on what Bill McKibben calls "Eaarth," a more capricious and threadbare planet. Coastlines will shift dramatically. Ecologies will change, forests will disappear, and species will die off at a faster rate. Storms will be larger and droughts longer and more severe. Our goal can no longer be to fashion "the world we want," but rather to cap off the worst that could happen to ensure that there is a habitable world at all. And even that will require a great deal of luck. I do not believe that there is a plausible way around the science underlying that conclusion.² Since carbon remains in the atmosphere for periods measured in centuries or millennia, the word "solution" as customarily used is not very useful in discussing climate change. In such rapidly changing ecological, technological, economic, and social changes, what is worth knowing? What is of enduring value? How do we teach?

This leads to a final conclusion. In conditions of climate chaos, morale of both students and teachers will be fragile and exposed to continual erosion from the turbulent, clashing, and cross-currents of our time. How we help our students avoid hopelessness and nihilism? How do we keep our wits about ourselves and sustain our own morale and sanity in such times?

Teachers and educators of all kinds have never faced more daunting challenges and perhaps greater opportunities to bring about systemic changes. The reasons for the former are sketched above; the reasons for the latter are inherent in our capacity for creativity, compassion, and foresight. I am sceptical about the drift of recent technology, but it is possible that properly used, some of it would enable us to create bonds and actions that amplify our capacities to foster positive changes. It could also do exactly the opposite. The difference between these two poles will be decided by how well and systemically we think and what we think about and so will depend very much on education. Without exaggeration it will come down to whether students come through their formal schooling as

more clever vandals of the Earth and of each other or as loving, caring, compassionate, and competent healers, restorers, builders, and midwives to a decent, durable, and beautiful future. If the latter, their education must begin in values that stress our connectedness in the fullest sense of the word. And it must enlarge their capacity for affection also in the fullest sense of the word.³

In the pages later, some of the most imaginative, skilled, and dedicated educators of our time describe the transition to a new “post-sustainability and environmental education” calibrated to the world of the twenty-first century. In various ways their common aim is to educate a generation of students who grow to be dangerous to the status quo, to injustice in its many forms, to violence visited on humankind and nature alike, to complacency, and to the muddled thinking that conceals the evil men do. Their common aim, expressed in various ways, is to build a far better world that begins in clarity of mind, compassion, dedication, and the stamina to endure undergirded by the awareness “that wonder is, now more than ever, an essential survival skill.”⁴

Oberlin, USA
August 2016

David W. Orr

NOTES

1. The phrase is taken from the title of David Ehrenfeld’s (1980) classic book, *The arrogance of humanism*.
2. See, for example, David W. Orr (2016) *Dangerous years: Climate change, the long emergency, and the way forward*.
3. Orr, 2016, pp. 99–115.
4. See Robert Macfarlane, *Landmarks*, 2016, p. 238.

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- Orr, D. (2016). *Dangerous years: Climate change, the long emergency, and the way forward*. New Haven: Yale University Press.

David W. Orr has been a long-time inspiration for environmental educators. His first two books, *Ecological Literacy* (SUNY, 1992) and *Earth in Mind* (Island Press, 1994), were about education premised on the idea that “all education is environmental education—what is included or excluded teaches that we are part of or apart from the natural world.” Since 1990, he has been a Professor in the Environmental Studies Program at Oberlin College, Ohio. In this role, he was instrumental in the design, funding, and building of the Adam Joseph Lewis Center, the first substantially green building on a US college campus and powered entirely by sunlight. David Orr reads for pleasure stimulated by an unruly curiosity, and he writes “to help organize my thoughts and to make what sense I can of the world of the long emergency.” His most recent book is *Dangerous Years: Climate Change, the Long Emergency, and the Way Forward* (Yale University Press, 2016). He is currently the Paul Sears Distinguished Professor of Environmental Studies, Emeritus, Oberlin College.

PREFACE

The idea for this book has been incubating for 2 or 3 years. Its importance was underscored at the 2015 World Congress on Environmental Education where I chaired a session titled “Post-Sustainability: Remaking education.” A persistent sub-theme from that session was a view that concepts like environmental and sustainability education and education for sustainable development are, in the words of one participant, “debilitated by a lack of philosophical clarity.” That participant was Stephen Sterling, my co-editor for this book. Central to his concern, and that of other presenters, is that the task at hand is not to add new bits to the curriculum, or to invent new adjective-driven educations, but rather, to frame a “vision for education” aligned to our extraordinary times.

As the United Nations Decade of Education for Sustainable Development has recently concluded, we now have a new opportunity to reconsider future educational aims. This coincides with a rapid expansion in ecological and environmental interest across the field of education—including curriculum studies and philosophy. And, there is a parallel interest in the public arena. This growing interest is, however, more than just timely. It is urgent, as David Orr so eloquently points out in his Foreword to this book. As he says, “time is running out on the experiment of civilization.” Ecologies are changing, forests are disappearing, species are dying, people are dispossessed, and climate is changing.

This book aims to provide serious critiques of education as a whole, and environmental and sustainability education in particular, and then to begin to revision, and indeed remake, a more complete version of education that responds to the challenges of our times. To meet this aim, this volume

gathers some of the most prominent international scholars who have been working on these issues over the last three decades.

We believe that this short book will be useful in the most obvious places—courses in environmental and sustainability education. However, the substance of this book is increasingly important at the centre of education—in curriculum studies, educational foundations, and philosophy of education. It might, thus, serve as an introductory reader for remaking twenty-first-century education.

Education also takes place at home, at work, and in community activities—with our children, our peers, our friends, and our neighbours. Education takes place in museums, aquariums, parks, playgrounds, summer camps, and social service agencies. And, of course, it takes place in schools, colleges, and universities. There are educational steps that can be taken by parents, students, community educators, and teachers. There are also steps that can be taken by school principals, curriculum specialists, superintendents, academics, university presidents, education ministers, generals, admirals, presidents, and prime ministers. The time for this collective education action is now. Never before has it been more critical to thoughtfully examine human activities on the Earth—our deepest assumptions, ideals, values, and worldviews. This is work for everyone.

Finally, this is an optimistic book. This is no time for cynics who are more content with despair than hope. As David Orr has so often said, “Hope is not the same thing as wishful thinking. Rather, it is located between wishful thinking and despair.” And, “It is a verb with its sleeves rolled up.” With hope, hard work, and fresh insights, educators can help to build a better world. Thank you for your engagement, and good luck.

Thunder Bay, Canada
October 2016

Bob Jickling

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