



SPRINGER NATURE
Sustainable Development Goals Series

SDG: 4
Quality Education

Mustafa Öztürk *Editor*



Educational Response, Inclusion and Empowerment for SDGs in Emerging Economies

How do education systems contribute
to raising global citizens?

 Springer

Sustainable Development Goals Series

The **Sustainable Development Goals Series** is Springer Nature's inaugural cross-imprint book series that addresses and supports the United Nations' seventeen Sustainable Development Goals. The series fosters comprehensive research focused on these global targets and endeavours to address some of society's greatest grand challenges. The SDGs are inherently multidisciplinary, and they bring people working across different fields together and working towards a common goal. In this spirit, the Sustainable Development Goals series is the first at Springer Nature to publish books under both the Springer and Palgrave Macmillan imprints, bringing the strengths of our imprints together.

The Sustainable Development Goals Series is organized into eighteen subseries: one subseries based around each of the seventeen respective Sustainable Development Goals, and an eighteenth subseries, "Connecting the Goals," which serves as a home for volumes addressing multiple goals or studying the SDGs as a whole. Each subseries is guided by an expert Subseries Advisor with years or decades of experience studying and addressing core components of their respective Goal.

The SDG Series has a remit as broad as the SDGs themselves, and contributions are welcome from scientists, academics, policymakers, and researchers working in fields related to any of the seventeen goals. If you are interested in contributing a monograph or curated volume to the series, please contact the Publishers: Zachary Romano [Springer; zachary.romano@springer.com] and Rachael Ballard [Palgrave Macmillan; rachael.ballard@palgrave.com].

Mustafa Öztürk
Editor

Educational Response, Inclusion and Empowerment for SDGs in Emerging Economies

How do education systems
contribute to raising global citizens?

 Springer

Editor
Mustafa Öztürk
School of Foreign Languages
Hacettepe University
Ankara, Turkey

The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States.

ISSN 2523-3084 ISSN 2523-3092 (electronic)
Sustainable Development Goals Series
ISBN 978-3-030-98961-3 ISBN 978-3-030-98962-0 (eBook)
<https://doi.org/10.1007/978-3-030-98962-0>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2022

Color wheel and icons: From <https://www.un.org/sustainabledevelopment/>
Copyright © 2020 United Nations. Used with the permission of the United Nations.

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

“Stop acting so small! You are the universe in ecstatic motion.” – Rumi

Realizing the vision of sustainability at a rather later age, I was inspired by a 2-week lifelong learning program that I attended a decade ago in Vienna. The awareness I gained during the program, which motivated its participants on acting with clear mind and good consciousness about sustainability, made me think how little I knew about this vision and what I should do more to internalize and spread it in my personal, social, and professional environment. This enlightenment has changed my direction in life both as an individual and an educator. It helped my academic activities evolve around sustainability, leading me to a great place – Teachers College of Columbia University, where I met so many education activists who believe in “an equal, just, sustainable and happy world” and who see themselves as “the universe in ecstatic motion.”

After so many enlightening courses, workshops, seminars, webinars, and so on, what I call awareness has now turned from a perceptive concept into an active capacity. I know that the universe is governed by thought, but it is changed by action. I, as an educator, wholeheartedly believe in the power of thought, but I also think that we need the power of action in education. Bringing more action-oriented awareness in the educational sphere would only help us raise individuals and generations who are able to build a sustainable future for humanity and nature. This awareness should stimulate a transformation, and this transformation begins within us because a real change starts when we change. And, the best way to create “a chain of change” is to learn and disseminate what others in other settings do to activate the transformation towards a sustainable future. Hence, this edited book is highly meaningful and impactful in terms of reaching other educators of sustainability around the world and reading their stories of education from different levels and areas. In this way, we are no longer “a drop in the ocean,” but we become “the entire ocean,” as an echo miraculously expressed centuries ago by Rumi.

Ankara, Turkey
November 2021

Mustafa Öztürk

Acknowledgments

This book is an outcome of a great partnership among members of academia, research, and practice who represent diverse educational and social settings across the world and who have a spirit of excellence in sustainability vision. I, as the editor, am grateful for this fruitful partnership and would like to thank all the contributors to this volume who did great work and made this book possible to reach readers.

Secondly, I would like to acknowledge the reviewers – *Aai S. Yean, Abdullah Bağcı, Amber Paulson, Aylin Albayrak, Burtay H. İnce, Charles Obiero, Dalila Coelho, Diveki Rita, Dobrawa Aleksiak, Emma Cameron, Farhana Borg, Gabriela A. Gutierrez, Giulia D'Amico, Gülnar Özyıldırım, Heather C. Scott, Hümeýra Can, JoAnne Ferrara, Juhudi Cosmas, Laisa M. Freire, Lina L. Lalinde, Loise Gichuhi, Magdalena Kuleta-Hulboj, Malgorzata Kosiorek, Maria Angelica M. Caceres, Mary Kangethe, Martin Dür, Nermeen Singer, Neşe Soysal, Ömer Çalışkan, Renata Goralska, Seçil Dayıoğlu-Öcal, Sergio Claudino L. Nunes, Sümeýra Ayık, Suzieleez S. Abdul Rahim, Thomas Hoffman, Trang Pham-Shouse, Yoshiko Asano, Zahra Zaheer, Zulfiqar Ali Chachar* – for assisting me and providing invaluable support throughout the review process.

Above all, we owe the progress to all individuals and organizations who enabled this work to be published. These individuals and organizations include learners, educators, schools, institutions, partners, and networks from Austria, China, Colombia, Egypt, Hungary, India, Kenya, Mexico, North Macedonia, Pakistan, Poland, South Africa, Trinidad and Tobago, Turkey, the UK, the USA, and Vietnam.

I am also thankful to *Sam Loni*, UN SDSN Program Director; *Amanda Abroom*, Global Schools Program Manager; and *Bahar Özay*, UN SDSN Turkey Coordinator, for supporting me in my endeavor to bring awareness of Education for Sustainable Development and Global Citizenship Education.

Finally, I would like to express my special thanks to the subseries advisors, *Arjen Wals* and *Nicole Ardoin*, for their valuable feedback on the book proposal, and I sincerely thank *Zachary Romano* and *Herbert Moses* for their kind and patient support during the editorial process as well as the other staff at Springer Nature for their interest and hard work.

Contents

Part I Policy

- 1 Key Elements of Education for Sustainable Development in Turkey's Education: An Analysis of Policy Documents. 3**
Burtay H. İnce, Seçil Dayıoğlu-Öcal, Neşe Soysal,
Aylin Albayrak-Sarı, Abdullah Bağcı, and Mustafa Öztürk
- 2 Reimagining Education for Climate Action and Resilience: A Multidimensional and Locally Grounded Approach in Mexican States of Chiapas and Yucatán. 21**
Lina López Lalinde, Emma Cameron,
and Gabriela Anzo Gutiérrez
- 3 Developing a Monitoring and Evaluation Framework for Education Systems in View of Sustainable Development Goals: A Case from Kenya 39**
Loise Gichuhi, Charles Obiero, and Mary Kangethe
- 4 Egypt's 2030 Vision: Priority Areas for Egyptian Education for Global Citizenship 51**
Nermeen Singer and El Farahaty El Sayed

Part II Curriculum

- 5 Looking for a Better Future? Reconstruction of Global Citizenship and Sustainable Development in Polish National Curriculum. 67**
Magdalena Kuleta-Hulboj and Dobrawa Aleksiak
- 6 Education for Sustainable Development Through Curricular Themes of Environmental Knowledge: An Analysis on Vietnam's Biology Curriculum 83**
Thi Phuong Le, Trang Pham-Shouse, and Thuy Linh Do
- 7 Global Citizenship in a National Curriculum: The Case of Pakistan's Single National Curriculum 103**
Zahra Zaheer

- 8 Integrating Education for Sustainable Development into a Local Formal Kindergarten Curriculum: A Curricular Practice From China** 129
Guangheng Wang, Ying Gong, and Hua Cui

Part III Practice

- 9 Creating a Safe, Free and Equal World for Our Children: Think Equal – A Holistic Early Years Programme** 145
Leslee Udwin, Giulia D’Amico, and Amber Paulson
- 10 Building Global Competence in Pre-school Settings: One World – A Global Citizenship Education Program in Guerrero, Mexico** 159
JoAnne Ferrara, Joseph Carvin,
and Rita del Pilar Zamudio Ochoa
- 11 A Rational View on Irrational Outcomes: Influence of an Intercultural Collaborative Program on Indian Students’ Perspectives.** 175
Martin Dür, Michaela Zint, and Lars Keller
- 12 Environmental Education Networks for Social Empowerment and Global Citizenship: A Case of Non-formal Education From Mexico.** 191
Rosalba Thomas Muñoz
- 13 Incorporating Education for Sustainable Development Into Teachers’ Continuous Professional Development Through Critical Environmental Agency** 205
Lacey D. Huffling, Heather C. Scott, and Sydney Rushing

Part IV Perspectives

- 14 Hungarian Secondary School Teachers’ Views on Global Competence Development in English as a Foreign Language Classrooms** 221
Rita Divéki
- 15 Promoting and Sustaining Global Citizenship Through Culturally Relevant Pedagogy and Cultural Liberation Pedagogy** 239
Kevin Cataldo
- Index** 255

Abbreviations

21CS	21st Century Skills
AU	African Union
CAE	Critical Environmental Agency
CCE	Climate Change Education
CDA	Critical Discourse Analysis
CECADESU	Center for Education and Training for Sustainable Development (in Spanish)
CESA	Continental Education Strategy for Africa
CLP	Cultural Liberation Pedagogy
CoHE	Council of Higher Education (Turkey)
CONABIO	National Commission for Biodiversity (in Spanish)
COVID-19	Corona Virus Disease
CPD	Continuous Professional Development
CRP	Culturally Relevant Pedagogy
DESD	Decade of Education for Sustainable Development
DoNE	Directorates of National Education (Turkey)
EA	Environmental Agency
ECE	Early Childhood Education
ECOSOC	Economic and Social Council of the United Nations
EE	Environmental Education
EFL	English as a Foreign Language
EK	Environmental Knowledge
EPA	Environmental Protection Agency
ESD	Education for Sustainable Development
EU	European Union
GAP	Global Action Program
GCE	Global Citizenship Education
GDP	Gross Domestic Product
GEC	General Education Curriculum
GIZ	German Society for International Cooperation (in German)
GoK	Government of Kenya
HDI	Human Development Index
IB	International Baccalaureate
ICT	Information and Communication Technology
KNBS	Kenya National Bureau of Statistics
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals

MEAL	Monitoring, Evaluation, Accountability and Learning
MGIEP	Mahatma Gandhi Institute of Education for Peace and Sustainable Development
MoE	Ministry of Education
MoET	Ministry of Education and Training
MoFEPT	Ministry of Federal Education and Professional Training
MoNE	Ministry of National Education (Turkey)
MoSHE	Ministry of Science and Higher Education
NASMLA	National Assessment System for Monitoring Learning Achievement
NCC	National Curriculum Council (Pakistan)
NEMIS	National Education Management Information System
NESSP	National Education Sector Strategic Plan
NGO	Nongovernmental Organization
OECD	Organization for Economic Cooperation and Development
OMEP	World Organization for Early Childhood Education (in French)
OXFAM	Oxford Committee for Famine Relief
PISA	Program for International Student Assessment
SDG4	Quality Education
SDGs	Sustainable Development Goals
SEL	Social Emotional Learning
SEMARNAT	Ministry of Environment and Natural Resources (in Spanish)
SES	Socio-economic Status
SNC	Single National Curriculum
STEAM	Science, Technology, Engineering, Art, and Math
TEPs	Teacher Education Programs
TIMS	Teacher Information Management System
TVET	Technical and Vocational Education and Training
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
USAID	US Agency for International Development
WEF	World Economic Forum

Editors and Contributors

About the Editor

Mustafa Öztürk is an instructor at Hacettepe University, Turkey, and an international research fellow at the Centre for Sustainable Futures at Teachers College of Columbia University, New York, USA. He holds an M.Sc. and a Ph.D. in curriculum and instruction from Middle East Technical University, Turkey. He completed a non-degree postgraduate study in learning, learning environments and educational systems at the University of Turku, Finland. He conducted his postdoctoral research at Teachers College of Columbia University on empowering ESD (Education for Sustainable Development) competencies in teacher education. With his research initiatives on ESD, he was awarded the Human Development Research Award by Koç University UNESCO Chair, Turkey. In his project entitled *Teacher Education for Sustainable Development through Flipped Learning Model*, he provided 1600 teachers working in different regions of Turkey with a professional development program on sustainability vision and the SDGs (Sustainable Development Goals). In 2019, he was given the title of Associate Professor by Turkish Council of Higher Education owing to his publications and research activities. He worked as the Country Chair and Research Manager in the Global Schools Piloting Project led by the UN SDSN (United Nations Sustainable Development Solutions Network) in support of UNESCO's GAP (Global Action Program) on ESD and the SDGs. He is also a Peace Fellow at Chulalongkorn University, Thailand, as a recipient of 2021 Rotary Peace Fellowship. He has worked in various EU projects on sustainability, environmental education, social inclusion, inclusive education, special education, and teacher development. He is engaged in designing, implementing, monitoring, and evaluating continuous professional development programs for in-service teachers in Turkey. Previously, he coedited the book entitled *Examining the Teacher Induction Process in Contemporary Education Systems* published by IGI Global. He also co-authored 42 K-8-level educational books approved by the Ministry of National Education, Turkey. He has a lot of articles and book chapters published in national and international journals and books.

About the Contributors

Abdullah Bağcı is a lecturer at Hacettepe University, Turkey. He obtained his M.S. in the Educational Administration and Planning Program at Middle East Technical University, Turkey, and his Ph.D. in the Educational Administration and Policy Program at Ankara University, Turkey. His primary research interests include higher education, comparative education, and education policy.

Amber Paulson is the director of education at Think Equal – a global initiative operating to provide high-quality early years education across the world.

Aylin Albayrak-Sarı is a research assistant in the Department of Science Education at Hacettepe University, Turkey. She obtained her B.S. in science education, and M.S and Ph.D. in educational measurement and evaluation from Hacettepe University. She conducted her postdoctoral research at Teachers College of Columbia University, USA. Her research interests include science education, teacher education, and educational measurement and evaluation.

Burtay H. İnce has been an EFL Instructor at Gazi University since 1999. She completed her B.A. at Hacettepe University and her M.A. at Gazi University in English Language Teaching. She holds her Ph.D. from Middle East Technical University in Curriculum and Instruction. Her research interests include pre/in-service teacher training, teaching English to young learners, use of technology in language teaching, and education for sustainable development.

Charles Obiero is a monitoring and evaluation consultant. He holds a Doctor of Education from the University of Sussex, United Kingdom. He has over 20 years of work experience at national and international levels in educational research, planning, monitoring, and evaluation with the Ministry of Education, Kenya, and UNESCO in diverse capacities in Uganda, Kenya, Lebanon, and the Russian Federation. He provides M&E technical support to the Ministry of Education, Kenya, and UN agencies under the Global Partnership in Education in Yemen on EMIS. He is the Director of Training Research and Evaluation International, Kenya, and EdTech Hub Network Specialist.

Dobrawa Aleksiak is a Ph.D. student in the Doctoral School of Social Sciences, University of Warsaw. Her doctoral research focuses on comparative studies of global education in Poland and Portugal. Her research interests focus on educational policy, global education, and teachers' experiences and comparative studies of education systems. She is interested in qualitative research and discourse analysis. She conducted workshops and trainings for teachers, students, and other groups involved in global education. Being an

author of scientific publications and presentations in the area of global education, she has experience in the non-formal sector as an educator and project coordinator (in Poland, Portugal, and Colombia).

El Farahaty El Sayed is Professor of Educational Psychology and Special Education and the Head of the Department of Psychological and Educational Tests at the National Centre for Examinations and Educational Evaluation, Egypt.

Emma Cameron is an education specialist with over 6 years of international development experience in research, policy design, impact evaluations, and teaching. She holds a Master of International Education Policy from Harvard University and contributed a chapter on education policy and curriculum reform in Kenya to Fernando Reimers' *Implementing Deeper Learning and 21st Education Reforms: Building an Education Renaissance After a Global Pandemic* publication. She is a current consultant for the World Bank and Centre for Global Development working on projects related to early childhood education, girls' education, initial teacher education, and education finance.

Gabriela Anzo Gutiérrez is a researcher with a background in education policy analysis, impact evaluations, and design and implementation of educational interventions. She holds a Master of International Education Policy from Harvard University. She contributed with chapters on teachers' tools for experiential learning based on SDGs to Fernando Reimer's *Learning to Collaborate for the Global Common Good* book and *Teaching Two Lessons about UNESCO and other writings on Human Rights* publication. She has conducted research on teacher professional rights, school leadership, inclusive education, and the right to education for all children, adolescents, and young adults in Mexico. She is currently the deputy director of the General Directorate of Continuous Teacher Learning of State Technical Teams in the National Commission for the Continuous Improvement of Education.

Giulia D'Amico is the CEO of Think Equal – a global initiative which operates globally to provide high-quality early years education across the world.

Guangheng Wang is a researcher at Shanghai Changning Institute of Education, which is mainly responsible for teaching research and teacher training as a subordinate institute to the local education bureau. Being in charge of conducting research on early child development and education and guiding kindergarten teachers to do research, she is one of the project leaders of the comprehensive reform of kindergarten education in Changning District. She has been cooperating with Hongqiao Kindergarten to implement ESD practices for over 10 years.

Heather C. Scott is Assistant Professor of Science Education and the director of the Middle Grades and Secondary Education MAT Program in the Middle Grades and Secondary Education Department. Her research focuses

on the intersections of science and environmental sustainability, teacher education, and citizen science in order to afford all students and communities opportunities to engage in robust science learning.

Hua Cui is the head of the Hongqiao Kindergarten and holds an M.Ed. The projects, “*ESD in Science Education*” and “*How to prepare teachers to incorporate ESD into their daily work with young children: From the experiences of Shanghai kindergarten teachers*” were awarded the winners of OMEP ESD project in 2011 and 2015.

JoAnne Ferrara is an associate dean of undergraduate programs and Professor of Education at Manhattanville College. Prior to joining higher education, she held positions as a general and special education teacher, a literacy coach, and school administrator. Currently she is serving as chair of One World’s educational advisory committee. She is an experienced educator specializing in community schools and university partnerships. She is the series lead co-editor for Professional Development School (PDS) Research Book Series and the author of several books, numerous articles, blogs, and chapters on professional development schools, community schools, and community/school partnerships. Her work has appeared in *Educational Leadership*, *the Journal of Research in Character Education*, *School-University Partnerships*, *the Journal of Leadership in Teaching and Learning*, and *Teacher Education and Practice*.

Joseph Carvin is the founder and the executive director of One World – a non-profit educational enrichment program designed to build global competence through character education and service learning. He had an international career in global finance working in major financial institutions such as Morgan Grenfell and Deutsche Bank. Fluent in five languages, he is a former candidate for Congress and Town Supervisor of the Town of Rye, New York. After a successful business career, he founded One World.

Kevin Cataldo is a proud Brazilian-American and an urban educator in Newark, New Jersey. He holds a Bachelor of Arts in education and English from Felician University and an M.A. in sociology and education from Teachers College, Columbia University. Kevin is currently pursuing a Ph.D. in teacher education and teacher development at Montclair State University. Kevin is interested in self-study qualitative research and researching race, equity, diversity, and culturally relevant pedagogy in K-12 school settings and teacher education.

Lacey D. Huffling is Associate Professor of Science Education at Georgia Southern University in the Middle Grades and Secondary Education Department. Her research focuses on the intersections of environmental sustainability, agency, and teacher education in order to afford all students and communities access to science and environmental education.

Lars Keller is a professor at the Institute of Geography at University of Innsbruck. He is the team leader of the Research Team of Education and Communication for Sustainable Development, which connects a huge network of school students, teachers, university students, education experts, sustainability experts, and climate change experts. Together with his team, he has been awarded several prizes (Hans Bobek Award, Sustainability Education Awards, Education Competence Centre Awards) for their hands-on research-education-cooperation projects and their scientific publications. He is the editor of the educational journal *GW Unterricht* and the deputy head of the Forum GW – Association for Geography and Economic Education. He is an evaluation consultant for the Austrian Federal Ministry for Education, Science and Research.

Leslee Udwin is the founder of Think Equal – a global initiative which operates globally to provide high-quality early years education across the world.

Lina López Lalinde is a Researcher with a background in education policy analysis and measurement and evaluation of educational programs. She holds a Master of International Education Policy from Harvard University and has previously published work related to climate change education in Guatemala in *Education and Climate Change*, as part of Springer's International Explorations in Outdoor and Environmental Education series. She currently serves as a researcher for the Population Council Mexico, working to measure the impact of the COVID-19 pandemic on Mexican youth and adolescents.

Loise Gichuhi is a lecturer in the Faculty of Education at the University of Nairobi. She holds a Ph.D. in economics of education from the University of Nairobi, a Master of Educational Planning and Curriculum Development, and a Bachelor of Education (Mathematics and Economics) from Kenyatta University. She serves as coordinator of Education in Emergencies Program and a strategic advisor on national and international projects. Currently, she is a strategic advisor to the Global EdTech Hub. She is also a consultant, researcher, and writer on education matters. She has mentored students through undergraduate and graduate programs. She is the founder of Education Bridge Africa.

Magdalena Kuleta-Hulboj is an assistant professor in the Faculty of Education, University of Warsaw. She holds a Ph.D. in pedagogy and an M.A. in sociology from the University of Warsaw. She is a researcher and lecturer with more than 15 years of experience in teaching at undergraduate and post-graduate levels. She has authored and co-edited three books on global and intercultural education. Her work has been published in peer-reviewed journals such as *Pedagogika Społeczna*, *Policy and Practice: A Development Education Review*, and *JSSE – Journal of Social Science Education*. Her research interests and expertise include global education, intercultural education, global citizenship, postcolonial and critical theories in education, qualitative data collection and analysis, critical discourse analysis, and social pedagogy.

Martin Dür is a secondary high school teacher and lecturer at the University College of Teacher Education Tyrol as well as at the Institute of Geography at the University of Innsbruck where he is a part of the Research Team of Education and Communication for Sustainable Development. He is in charge of several projects in which school students from Austria collaborate with peers from different parts of the world (mainly from the Global South) and jointly conduct research in order to develop a more sustainable lifestyle. A collaboration of students from Austria and India was awarded by the Austrian Ministry for Agriculture, Environment and Water Management as a best practice example for education for sustainable development.

Mary Kangethe is the director of the education program, Kenya National Commission for UNESCO (KNATCOM). She holds a Bachelor of Education and a master's degree in education (guidance and counselling) from Kenyatta University. She has worked as a secondary school teacher and an officer at the Ministry of Education at local and national levels. She has conducted various studies in education and is currently coordinating the development of the Monitoring, Evaluation, Accountability, and Learning (MEAL) framework in Kenya.

Michaela Zint is an associate dean and professor in the School for Environment and Sustainability at the University of Michigan in the USA where she conducts research and teaches courses in environmental and sustainability education as well as communication. She is particularly interested in exploring the determinants of environmentally responsible behaviors and identifying pedagogies most effective in fostering changes in individual students' actions. She has extensive expertise in evaluating US environmental education programs at the local, regional, and national level and has developed resources and systems to develop individuals' evaluation competencies and organizational evaluation capacities. She is a recipient of the North American Association for Environmental Education's Outstanding Contributions to Research in Environmental Education Award and is on the editorial board of the *Journal of Environmental Education*.

Mustafa Öztürk is an instructor at Hacettepe University, Turkey, and an international research fellow at Centre for Sustainable Futures at Teachers College of Columbia University, USA. He holds an M.Sc. and a Ph.D. in curriculum and instruction from Middle East Technical University, Turkey. He completed a non-degree postgraduate study in learning, learning environments, and educational systems at the University of Turku, Finland. He conducted his postdoctoral research at Teachers College of Columbia University, USA, on empowering ESD competencies in teacher education. In 2019, he was given the title of Associate Professor by Turkish Council of Higher Education owing to his publications and research activities.

Nermeen Singer is Associate Professor of Media and Children's Culture in the Faculty of Graduate Studies for Childhood and the head of the Centre for Public Service and Social Development at Ain Shams University, Egypt. She

has been working on using different kinds of media to treat learning difficulties, especially for children with special needs.

Neşe Soysal is an independent researcher and the director of Edu4Global Consultancy in London. She graduated from the Department of Foreign Language Education, Faculty of Education, Middle East Technical University. She holds a Master of Educational Administration from Trakya University and a doctoral degree in curriculum and instruction from METU in Turkey. She worked as a lecturer at Atılım University and Marmara University in Turkey. She is interested in carrying out research on teacher education, education for sustainable development, curriculum development and evaluation, and teaching and learning.

Rita del Pilar Zamudio Ochoa received her B.A. from the Universidad Veracruzana and her M.A. from the Instituto Latinoamericano de Comunicación. She is currently the head of Teaching for Civic and Ethical Secondary Education for the region of Acapulco. Previously, she founded and ran CIDEA – a research center on educational development – and served as the department head for secondary education in the State of Guerrero. She is the co-author of the book *Formación Ciudadana de los Adolescentes Guerrerenses (Citizen Education for Adolescents in Guerrero)* and the author of the article “Estrategia Pedagógica para Incrementar la Habilidad de Comprensión Lectora en Alumnos de Educación Primaria” (*Pedagogical Strategy to Increase Reading Comprehension Skill in Primary Education Students*).

Rita Divéki is a language teacher in the Department of English Language Pedagogy at Eötvös Loránd University (ELTE), a temporary lecturer at Pázmány Péter Catholic University in Budapest, and a PhD candidate in the language pedagogy program of ELTE. Her main interests include teaching controversial issues, global citizenship education, teaching with pop culture, and using mobile learning for skills development.

Rosalba Thomas Muñoz is a political scientist and a professor at the University of Colima. She has a master’s degree in environmental science from the UASLP Multidisciplinary Graduate Program and a Ph.D. in social sciences. She has been a member of the National Academy of Environmental Education since 2010, and now she is a member of the Environmental Management Center and the National System of Researchers (Level I) with research lines in studies of the discourse of sustainability, education, culture, and environmental communication and sustainability. She has written books, book chapters, articles, and documentaries related to sustainability, education, and environmental culture.

Seçil Dayıoğlu-Öcal has been working as an Instructor at Hacettepe University since 2002. She graduated from the Department of Foreign Languages, METU in 1998, completed her M.S. in the Department of Educational Sciences, METU in 2003, and earned her Ph.D. from the

Department of Educational Administration, Supervision, Planning and Economics, Hacettepe University in 2012. She worked as a postdoc researcher at the University of Missouri, Columbia, USA, in 2014. She has taken part in projects on teacher education and development. Her research interests include higher education, university-industry collaboration, academic capitalism, teacher education, and professional development of teachers.

Sydney Rushing is a graduate of Georgia Southern University, with a bachelor's degree in English and History and a M.A. in Teaching, Secondary English Education. She also participated in a student exchange program at Sheffield Hallam University, the UK with a focus on International History and English Education. Her interests include foreign languages, world literature, children's literature, and international schools. She teaches secondary English at an international school in Kuwait.

Thi Phuong Le is a Doctor of Biology and the director of the Center for Anthropology and Mind Development (CAMD), University of Education, Vietnam National University, Hanoi. She is currently a senior lecturer in the Faculty of Pedagogy, University of Education. She holds a Ph.D. from Hanoi National University of Education and pursues research directions on the environment, ecology and environmental education, and sustainable development in schools. She has published 20 reference books and textbooks for students and has more than 40 domestic and international scientific papers related to the field of ecology and environment.

Thuy Linh Do is a Ph.D. candidate at Hanoi National University of Education, Vietnam. She obtained her Bachelor of Biology Education from VNU University of Education, Hanoi, and her Master of Biotechnology from Korea University. She got a full scholarship from Pony Chung Foundation, which belongs to Hyundai Corporation, to pursue her master's course in Korea. She is interested in biology education, particularly competence-based teaching and learning, teaching Genetics, and ESD. She has been a former lecturer in the Faculty of Pedagogy, University of Education, Vietnam National University, Hanoi, Vietnam.

Trang Pham-Shouse is a Ph.D. candidate in the educational leadership program in the Department of Education Policy Studies, Pennsylvania State University, USA. She got her bachelor's degree in TEFL and her master's degree in English linguistics from Vietnam National University, and her M.Ed. from Pennsylvania State University (as a Fulbright Vietnamese student). She's got more than 10 years of K-12 teaching experience and 5 years of experience in youth empowerment and environment protection. She is a former Fulbright Student recipient, Alpha Delta Kappa International Teacher Excellent Awardee, and Delta Kappa Gamma World Fellowship. She is interested in teacher preparation and youth engagement in service learning.

Ying Gong is the Teacher Leader at Hongqiao Kindergarten and holds an M.Ed. Her projects “*ESD in Science Education*” and “*How to prepare teachers to incorporate ESD into their daily work with young children: From the experiences of Shanghai kindergarten teachers*” were awarded the winners of OMEP ESD project in 2011 and 2015.

Zahra Zaheer holds a master’s degree in education, with a specialization in learning and teaching from Harvard Graduate School of Education. She has served as a consultant for 3 years on a DFID-funded project with the Government of Punjab, Pakistan, where she supported the development of evidence-based and child-friendly textbooks for early primary grades as part of a large-scale education quality reform program. Currently, she is managing the development of a transversal skills framework and curriculum for K-12 learners in the UAE.

List of Figures

Fig. 2.1	Multidimensional framework.	25
Fig. 3.1	Steps of building a MEAL framework.	46
Fig. 4.1	Basic curricular elements of GCE	57
Fig. 4.2	Shift from traditional education model to education for nature and environment	61
Fig. 7.1	Structure of Single National Curriculum adapted from NCC	110
Fig. 7.2	Elements of SNC mapped against UNESCO's GCE framework	112
Fig. 8.1	Steps for ESD integration in Hongqiao Kindergarten	133
Fig. 10.1	Educational framework of One World	165
Fig. 12.1	Geographical representativeness of the study	197
Fig. 12.2	Actions to motivate learning	198
Fig. 12.3	Activities to promote critical thinking	198
Fig. 13.1	CEA principles aligned to sustainability frameworks for ESD integration in teacher education.	208
Fig. 13.2	Our2Swamp program mapped to CEA principles	209

List of Tables

Table 1.1	List of policy documents used as data source	10
Table 1.2	Concepts/sub-concepts by policy documents	12
Table 1.3	Key competencies by policy documents	13
Table 3.1	Distribution of out-of-school children.	41
Table 3.2	Monitoring and evaluation framework	47
Table 5.1	Analytical categories by domains of learning	74
Table 6.1	EK themes within Biology curriculum and corresponding SDGs	91
Table 8.1	Overview of ESD practices in Hongqiao Kindergarten . .	133
Table 8.2	ESD-related objectives in China’s formal kindergarten curriculum	135
Table 8.3	Scores of ESD rating scale between 2016 and 2021	139
Table 12.1	Questionnaire items and categories.	196
Table 12.2	Actions for social empowerment.	199
Table 12.3	Actions related to SDGs	199
Table 12.4	Global citizenship competencies.	201
Table 12.5	Capacities and contexts of actions.	201
Table 13.1	Identified SDGs and definitions used for coding.	210
Table 13.2	Our2Swamp program for immersive weeklong CPD	211
Table 13.3	CEA principles’ alignment with CPD program and SDGs	212
Table 13.4	Co-occurrence of codes.	213
Table 14.1	Building blocks of global competence based on OECD.	223
Table 14.2	Interviewees’ profiles	228
Table 14.3	Components of global competence according to interviewees.	229

Introduction

The world needs many of its citizens, particularly the next generation, to have the knowledge, skills, and values necessary to tackle the greatest challenges of the twenty-first century, and shape a sustainable future for all humanity. Current industrial and technological innovations alone are likely to fail in driving a systemic change needed to transform the existing model to a more sustainable way of life. In order for a larger and more applicable transformation to take place in our world, the principles of sustainable development should be adopted at communal and cultural levels – unquestionably starting with individual behaviors and progressing towards collective actions. The most important area that will make this possible is “education.” The main function expected from education is to inform learners about the vision of sustainability, instill the required sensitivity in them towards the issues that concern the whole world, and create an effective change in their behaviors regarding all areas of life.

A transformation being possible through education has to be both multidimensional and multilateral, and the realization of this transformation depends on the activation of systemic, continuous, innovative, adaptive, and transformative learning methods accepted and practiced in the analysis, design, development, implementation, and evaluation processes of education. Starting at an early age and being reinforced until adulthood, ESD (Education for Sustainable Development) and GCE (Global Citizenship Education) aim to (a) equip children with the knowledge, skills, and values that are critical for their development and success in a rapidly changing world; (b) enable the creation of effective learning environments and tools; (c) increase the quality of education; (d) enrich the content; and (e) support educators in this endeavor.

One way of getting a broader understanding of globally prioritized issues such as sustainable development or global citizenship is to hear local, national, or regional voices from the educational sphere. Consistent with this need, this edited book is prepared to see educational response, inclusion, and empowerment for the SDGs (Sustainable Development Goals) in emerging economies. Emerging economies is defined as newly industrialized countries that have not reached the developed status yet, but have, in a macro-economic sense, outpaced their developing counterparts. Despite having a lower-to-middle per capita income, these countries are experiencing rapid growth and being more important in world economics as they have a significant influence on the global growth. Progressing from a low-income, less developed, and pre-industrial economy into a modern, industrial, and developed economy with a

higher standard of living, they appear as a transitional zone or a linking bridge between the developed and the developing.

There is no universal consensus on exactly which countries qualify as emerging economies. However, there are several different lists that have become generally accepted for establishing emerging market countries. According to the MSCI (Morgan Stanley Capital International) Index, 24 developing countries qualify as emerging economies including *Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates*. The International Monetary Fund (IMF) has a similar list of 23 as well.

Considering the best known definition of sustainable development, conventional economic progress might fail in meeting the needs of millions of people today and might risk future generations' ability to meet their own needs. In this respect, the current emerging economies are particularly expected to respond to the growing demand for new ways of life to conserve the Earth and sustainably manage its resources. Being at the forefront of economic growth, emerging economies tend to utilize technology and innovation faster and more enthusiastically than many other countries. On the one hand, they have a higher rate of growth compared to developed countries; on the other hand, they are plagued by higher socio-political instability and unease, and thus desire to create a better quality of life for their people. All these facts make emerging economies interesting cases to read about. Hence, this edited book highlights how education in emerging economies succeed in extending conventional economic methods to sustainable issues or departing from money-based calculations and business-dominated values to real-life considerations regarding ethical, environmental, and humanistic values. In the book, the readers have a chance to look at the educational response, inclusion, and empowerment for the SDGs in those countries and the place of global issues within national education systems in terms of policy, curriculum, practice, and perspectives.

Having been prepared with a polyphonic and multi-perspective approach with the contributions made from different contexts of education across the world, the volume consists of 4 sections including 15 chapters. Accordingly, the content is arranged in four groups of contributions representing (I) policy-level, (II) curriculum-level, (III) practice-level, and (IV) perspective-level cases from various emerging economies including Turkey, Mexico, Kenya, Egypt, Poland, Vietnam, Pakistan, China, Austria, India, Hungary, and some other transnational settings.

Policy-Level Cases

The first section of the book focuses on educational policies. In this section, there are chapters discussing the reflections of the SDGs on educational policies and legislations in emerging economies. Through a situation analysis or a framework development process, the chapters map the core concepts of sustainable development and global citizenship against national policies and

laws by providing a synthesis of their importance and relevance within the overall structure of the national systems and illustrate how educational transformations could be designed.

In Chap. 1, the authors present an integrated document analysis performed on educational policy documents in Turkey and demonstrate how global perspectives of education find a way into the local policies and legislations. As one of the emerging economies, Turkey has prioritized the vision of sustainable development in its educational policies considering its importance for its own and the world's future. Through a highly centralized structure, all educational policies and national curricula are prepared and enforced by the central office of the Ministry of National Education, Turkey. Seeing policy documents as essential collections of information about the educational response, inclusion, and empowerment for the SDGs, the authors map the key elements of ESD against national educational policies and provide insights for future directions to accelerate the adoption and integration of ESD in all processes of education.

Focusing mainly on climate change, Chap. 2 outlines a multidimensional and locally grounded framework that would account for social, cultural, psychological, professional, institutional, and political factors involved in educational transformation processes. Sustainability is one of the greatest challenges Mexico is currently facing. Particularly, environmental degradation caused by water scarcity, loss of biodiversity, pollution, hurricanes, floods, and fires has been accompanied by rising inequality in the country. Therefore, there has been an increasing number of initiatives of integrating environmental education into Mexico's education system since 1990s. The authors mainly use a holistic framework to illustrate how the theoretical discourse on educational transformation could serve as a reference when designing and implementing education for climate action and resilience in the Mexican states of Chiapas and Yucatán, both of which suffer from various vulnerabilities to climate change.

Chapter 3 is a case from Sub-Saharan Africa and presents a stepwise process which is followed particularly when constructing a framework for monitoring, evaluation, accountability, and learning for Kenya's educational commitment to the SDGs, in particular to the SDG4. Considering the large proportion of young population in Kenya, quality education appears to be major issue for the government. Therefore, the authors see ESD as a critical angle for educational development and choose to support their case primarily with a document analysis on national policies and legislations as well as a consultative and participatory data collection method which enabled diverse technical experts and team members from the Ministry of Education to participate in the holistic and integrated design of the framework.

As the last chapter of the policy section, Chap. 4 first outlines the concepts of citizenship, globalization, global citizenship, and GCE, then discusses four priority areas for Egypt's 2030 Vision, and finally provides recommendations for the Egyptian education system. In response to the challenges of the recent revolutions of the Egyptian people from 2011 to 2013, the Egyptian government has presented and made numerous efforts to support social cohesion through citizenship education during the implementation of the new

constitution and laws that focus on human rights, participatory democracy, and decentralized educational administration. Built on the vision of GCE, the chapter discusses priority areas as setting an educational framework for global citizenship; integrating GCE into the curriculum; increasing global citizenship and civil society awareness at schools; and reorienting education towards nature and environment.

Curriculum-Level Cases

Although pedagogical and social imperatives might be clear enough, the SDGs might still be challenging to prioritize in curriculum. The second section of the book consist of the chapters that report on curricular analyses or practices through different cases in which global competencies defined in the 2030 Education Agenda are mapped against local or national learning outcomes in curricular or co-curricular records. With the help of these chapters, national frameworks for global citizenship and sustainable development are portrayed through a synthesis of their importance and relevance within the curriculum of emerging economies.

As a qualitative investigation, Chap. 5 focuses on discursive conceptualizations of global citizenship and sustainable development in the Polish national curriculum and demonstrates whether the curriculum creates opportunities to foster global citizenship. Poland, the former Soviet bloc country and foreign aid recipient, now transformed into an Official Development Assistance donor with a growing level of income, quality of life, and a stable economy, is hard to locate simply on a political and epistemological map. Neglected during the communist era and at the beginning of the transition period, environmental and sustainability issues started to gain attention in Poland at the end of the 1990s. Poland nowadays is the largest economy of the ex-Eastern bloc countries and has been reclassified in some indices from “emerging markets” to “developed markets.” The critical discourse analysis done on the subject areas of *History*, *Citizenship Education*, and *Geography* puts forward three main points: global citizenship is almost non-existent in the curriculum; ESD and GCE are not presented as intertwining nor cross-cutting approaches; and the curriculum offers no transformative potential.

Chapter 6 focuses on Vietnam’s biology curriculum for high schools. Vietnam has nationalized the SDGs into 115 Vietnamese SDG targets as part of the National Action Plan for the Implementation of the 2030 Agenda for Sustainable Development, reflecting the country’s conditions and development priorities. Being considered an essential part of Vietnam’s approach to ESD, environmental education is adopted across all disciplines, aiming to nurture learners with relevant knowledge about the environment and competencies for environmental protection. This chapter explores curricular references to the SDGs by using a list of themes from Hungerford’s Environmental Knowledge framework which is suggested for environmental literacy development in learners. Besides identifying the SDGs that could be integrated into the curriculum being emphasized as the nationalized SDG targets of Vietnam, the authors recommend educators to consider local characteristics

and school resources when selecting textbooks and organizing educational activities for learners to experience more personalized learning at schools.

Chapter 7 analyzes the national curriculum of Pakistan and discusses how well it is designed to prepare young people for global citizenship. Pakistan is a prime example of a country that faces domestic challenges that have implications for a globalized world. With nearly 140 million young people under the age of 30 and limited investments in education, the country risks raising a generation that have scarce access to economic opportunities, thus exacerbating inequality and its associated global challenges. Using UNESCO's GCE framework for a normative comparison, the author evaluates the emphasis placed on key global issues or concepts related to global citizenship within the national curriculum. Through a systematic textual analysis of the 2018 National Curriculum Framework and the curriculum documents for the subjects of *English*, *Urdu*, and *Social Studies*, the author concludes that the coverage of GCE in the curriculum is limited and there is an explicit focus on creating a national identity, which may conflict with the cosmopolitan values of global citizenship.

The last chapter of curriculum-level cases, Chap. 8 outlines a decade-long process of integrating ESD into the curriculum of a local kindergarten in Shanghai, China. ESD in early childhood education in China started with environmental education as early as the 1980s, and currently, there are more than 100 million children aged 6 and below in China, accounting for about one-fifth of the world's population of the same age. Telling the tale of the curricular practice of combining new activities for social-emotional learning and financial literacy education in early childhood education, the authors present the coordinated and discordant aspects of ESD integration into a curriculum, discusses the implications for a long-term and effective development of ESD practices, and provides valuable information for similar contexts aiming to implement ESD in early childhood education.

Practice-Level Cases

The most fundamental challenge with regard to policy and curriculum is to determine to what extent the vision and targets included in educational policies and programs could be put into practice. Some decisions or principles that seem perfect on paper may not be put into practice as planned. For this reason, it is important to ensure that policy/curriculum makers as well as practitioners adopt and internalize these principles at the same rate. Only in this way can these principles develop and become widespread in the desired direction. The third section of the book includes practice-level cases from pre-school education to adult education, representing both formal and non-formal learning environments from diverse geographical settings.

Highlighting the importance of ESD as a process of social learning and seeing the child as a competent citizen with formal rights, Chaps. 9 and 10 focus on pre-school education as critical period to encourage children to become well-educated individuals who can make right decisions for themselves as well as in situations concerning other people. Chapters 11 and 12