Environmental and Sustainability Education in Teacher Education

Canadian Perspectives
International Explorations in Outdoor and Environmental Education

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Research is a particular focus of the volumes, reflecting a diversity of approaches to outdoor and environmental education research and their underlying epistemological and ontological positions through leading edge scholarship.

The scope is also be both global and local, with various volumes exploring the issues arising in different cultural, geographical and political contexts. As such, the series aims to counter the predominantly “white” Western character of current research in both fields and enable cross-cultural and transnational comparisons of educational policy, practice, project development and research.

The purpose of the series is to give voice to leading researchers (and emerging leaders) in these fields from different cultural contexts to stimulate discussion and further research and scholarship to advance the fields through influencing policy and practices in educational settings. The volumes in the series are directed at active and potential researchers and policy makers in the fields. Book proposals for this series may be submitted to the Publishing Editor: Claudia Acuna E-mail: Claudia.Acuna@springer.com

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Douglas D. Karrow • Maurice DiGiuseppe
Editors

Environmental and Sustainability Education in Teacher Education
Canadian Perspectives
Series Editors’ Foreword

This book, the third in our series, focuses on a topic close to our professional hearts and experiences – environmental and sustainability education in pre-service teacher education. As former teacher educators who, for many years, taught environmental education related subjects to pre-service teachers, we are both very aware of the issues facing the implementation of environmental education in teacher education institutions as we have faced many of the issues discussed by the authors in this book. Sometimes, one of us was the only faculty member teaching in the area. At other times there was a team, but after a while the momentum was lost. As discussed in these chapters, engagement of faculty beyond close colleagues is often difficult as they are engaged in their own pursuits and passions. Even now, we see how our own institutions are struggling to respond to the Sustainable Development Goals SDGs (United Nations 2015) and make them meaningful in university practices as well as teaching. The responsibility for this is with all of us as educators writ large, as Charles Hopkins and Katrin Kuhl argue (in this volume),

This cannot be the responsibility of any one person or one department. We must recognise that we are speaking of examining the very purposes of education and reorienting each discipline to contribute to a coherent and effective outcome. We must understand that to accomplish this, no single teacher, discipline, or department can do it all, or can ‘own’ ESD.

An edited collection, this volume reflects a range of different perspectives on preservice teacher education and professional development opportunities for teachers from a Canadian perspective, but the issues discussed are similar to those experienced by teacher educators in many countries. Many of the chapter authors have examined the issues at a micro level whereas others have looked at the bigger picture – the institutional, political, philosophical, and ontological issues confronting implementing EE in preservice teacher education. This volume is a good complement to earlier work (such as Ferreira, Ryan, and Tilbury (2006), Ferreira et al. (2009) and Steele (2010) which reviewed and advanced sustainability in preservice teacher education in Australia), and to current and future research, which is contributing to a developing body of research in environmental and sustainability education in preservice teacher education.
The importance of teachers and teacher education in implementing environmental and sustainability education has been recognised since the Belgrade Charter (UNESCO 1975) and the 1977 Tbilisi Intergovernmental Conference on Environmental Education (UNESCO 1978). These early recommendations were framed around the belief that all teachers need ‘to understand the importance of environmental emphasis in their teaching’ and so ‘environmental sciences and environmental education [need to] be included in curricula for pre-service teacher education’ and that ‘the necessary steps [are taken] to make in-service training of teachers in environmental education available for all who need it’ (UNESCO, 1978, pp. 35–36). More recently, Sustainable Development Goal 4 (United Nations 2015) has called for education programmes and practices to be reorientated to ensure that, by 2030, all learners acquire the knowledge and skills needed to promote sustainable development. Sadly, as many of the authors in this volume (and others such as Evans et al 2017, Ferreira et al 2009, Gough 2016) report, much teacher education is still not addressing environmental and sustainability education, although there are glimmers of hope.

The arguments in this volume exhibit many of the tensions that have plagued establishing environmental and sustainability education (ESE) in Preservice Teacher Education (PTE) since the 1970s, some of which were identified by Hopkins et al. (2005)1:

- ESD is seen as a political priority by governments, not an educational one.
- When governments (national, provincial/state or local) act on ESE it is generally through the environment ministries not education.
- Even when in curriculum and policy documents, EE tends to be recommended not mandated.
- Environmental education (EE) and Education for Sustainable Development (ESD) are often seen as similar or even interchangeable.
- Teacher certification guidelines do not mention sustainability.
- Teacher education institutions lack the institutional climate that supports the creativity, innovation, and risk-taking necessary to support transformative efforts to re-orient education to address sustainability.
- Teacher education institutions are filled with people passionate about their own areas, and EE/ESD is seen as marginal by most academics.
- EE initiatives are currently championed by enthusiastic individuals not holistically in most institutions.
- Institutions or faculty members who undertake ESE programmes are rarely rewarded or recognised.
- Lack of or inadequately trained professionals who are knowledgeable about ESE.

1While the convention throughout this book is to refer to Environmental and Sustainability Education (ESE), Hopkins and McKeown (2005) and Hopkins and Kuhl (in this volume) follow UNESCO documentation and refer to ESD. The UNESCO convention has been followed in this Foreword when UNESCO documentation is being referenced. Elsewhere in this volume the two terms are seen as interchangeable.
• Should EE be a separate subject or a cross-curriculum area? Or an overall purpose of education systems?
• How can universities re-orient themselves towards the Sustainable Development Goals (SDGs)?
• Insufficient or inadequate funding and material resources.

Charles Hopkins and Katrin Kuhl (Chap. 2) argue that having Education for Sustainable Development (ESD) as a purpose of education in the Sustainable Development Goals (United Nations 2015) ‘is a significant change from the very early attempts to address sustainability within formal education’ as education became a ‘forgotten priority’ after the UN Conference on Environment and Development (UNCED) (1992) because ESD tended to be taken up by ministers of the environment rather than ministers of education, often presented or perceived as a newer, yet similar form of environmental education (EE). Fortunately, at the close of the United Nations Decade of Education for Sustainable Development 2005–2014 (UNESCO 2005), in the Aichi-Nagoya Declaration on Education for Sustainable Development (UNESCO 2014a), member states reaffirmed that ESD was a vital means of implementation for sustainable development, identified their education systems’ roles in implementing sustainable development, and launched the global action programme on education for sustainable development (GAP) (UNESCO 2014b).

The Aichi-Nagoya Declaration (UNESCO 2014a) also recognised that ESD could be seen in various ways: as sustainability education, joining a host of other societal issues that needed addressing; as another discipline to be added to already overcrowded curricula; or as an overall purpose of education systems engaging all aspects of education, both formal and informal. These multiple conceptualisations of ESD continued the confusion in teacher education institutions that had previously been noted by Hopkins et al. (2005), and continues to remain in many institutions – as evidenced by many of the chapters in this volume and UNESCO (2016) who reported that only 8% of 66 countries surveyed integrated sustainable development into their teacher education. Stronger efforts are urgently needed to assess concepts inherent in ESD and global citizenship for teacher preparation and professional development.

While Lucie Sauvé (Chap. 4) argues that teacher competencies in EE need to be supported: ‘teachers must receive adequate education about fundamentals and contents, as well as about appropriate approaches and strategies for environmental education’, several other authors in this volume draw attention to how EE is not occurring in the majority of faculties of education in Canadian universities, and where it is occurring, it is because of the passionate and dedicated efforts of a few committed faculty members (see, e.g. Karrow et al., Chap. 7). They also note that, across Canada, EE is underprioritised in Ministry and College policy and accreditation guidelines. David Greenwood (2010) summarises the situation in Canada (and many other places) but also provides a glimmer of hope that is reflected by the authors in this volume, when he writes,

Environmental and sustainability education are marginal to teacher education discourse if they are part of it at all. However, the professional autonomy available to faculty members does make it possible to create space at the grassroots within the otherwise regulated system.
to pursue educational aims that are neglected by convention and by design. Over time, grassroots work can begin to change local cultural practices and can coalesce into meaningful changes in policy. (p. 144)

Several of the authors in this volume grapple with the age-old problem of where does ESE fit in the overcrowded school – and preservice teacher education – curriculum. Many accept its place as a cross-curriculum priority of some sort or through discrete electives, but Karrow et al. (Chap. 7) argue for EE being recognised as a teachable subject in preservice teacher education programs in order to elevate its profile and attract more students. Another approach that is proposed is to make EE a key aim of an entire preservice teacher education program. Maurice DiGiuseppe et al. (Chap. 9) discuss the pros and cons of separate course (with EE afforded the same curricular status as mathematics, language arts or science education) or infusion across the curriculum, whereas Ying-Syuan Huang and Anila Asghar (Chap. 17) note that EE has largely become an individual effort rather than a cross-curricular integration.

The article by Evans et al. (2017) is a reference point for the final chapter. While limited in its engagement with the extent of ESE in teacher education programmes because of the researchers’ narrow selection criteria (recent studies, such as Vega-Marcote and Varela-Losada (2016), and book chapters were omitted), it does provide a catalyst for comparisons and continuing conversations. The authors in this volume have documented some seemingly intractable challenges in their efforts to embed ESE in preservice teacher education, but they also tell of some successes. Where Evans et al. and the authors in this volume agree is that there is a great need for further research on programmatic approaches employed in preservice teacher education programmes; the theoretical frameworks undergirding and informing those approaches; curricular emphases and outcomes employed in these programmes; and the lived experiences of the students, instructors, administrators, and policy-makers. This is particularly so as we all work together towards achieving the targets of the SDGs by 2030, and teacher educators have a particular role in ensuring that preservice teachers everywhere are provided with opportunities to think critically and creatively on environmental issues; making informed judgements about those issues; and engage in pro-environmental behaviours (Wals et al. 2014) that they can then share with their students.

This is an important book for starting, and continuing, conversations around re-orienting teacher education to address sustainability that have been too long in gestation. We are confident that teacher educators around the world will find this volume of interest to their practice at all levels.

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Preface

Following the United Nations’ declaration of 2005–2014 as the Decade of Education for Sustainable Development, various provincial ministries of education throughout Canada enacted policies mandating environmental sustainability education (ESE) within K-12 education settings. In general, these policies require faculties of education—responsible for the education, and in most cases, certification of teachers—to make ESE a component of preservice teacher education programs, in the belief that improved preparation will greatly assist teachers in enhancing ESE in K-12 classrooms.

This book has its origins in the presentations at the inaugural National Roundtable on Environmental and Sustainability Education in Canadian Faculties of Education (Roundtable 2016), which took place June 14–16, 2016, at Trent University in Peterborough, Ontario. Roundtable 2016 brought together over 70 participants from across Canada, including educators, researchers, policy-makers, consultants, and community organisations. Over the course of 3 days, participants took part in keynote addresses, research colloquia, networking socials, and collaborative inquiry activities. Roundtable 2016 resulted in the publication of a National Action Plan containing action-oriented recommendations for enhancing Environmental and Sustainability Education in Preservice Teacher Education (ESE-PTE), and a position statement titled ‘The Otonabee Declaration’, in which delegates articulated their views regarding environmental degradation, the critical need for enhancing ESE-PTE, and, the role educators, children, youth, educational institutions, policy-makers, and Indigenous communities play in enhancing ESE-PTE in Canada. It should be acknowledged that while National Roundtable 2016 focused on PTE, the mandate of original organisers was formalised through the Environmental and Sustainability in Teacher Education Standing Committee of the Canadian Network for Environmental Education and Communication (EECOM) and naturally expanded to include the more encompassing term, ‘teacher education’, as reflected in the book’s title, Environmental and Sustainability Education in Teacher Education: Canadian Perspectives. The significance of this is explained in the first chapter (Chap. 1). All works herein, with the exception of the concluding chapter (Chap. 19), were originally presented in some form during National Roundtable
2016. The majority of chapters in this book are previously unpublished and original, some have been slightly revised since presentation, and five are re-published chapters originally appearing in a previous book publication, *Canadian Perspectives on Initial Teacher Environmental Education Praxis*, the focus of which was an examination of the dialectical relationship between theory and practice.

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Oshawa, Canada

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Acknowledgments

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Abbreviations

ACAP     Atlantic Coastal Action Program
ACDE     Association of Canadian Deans of Education
ACFE     l’Association canadienne pour la formation des enseignants
ADHD     Attention Deficit Hyperactivity Disorder
AERA     American Educational Research Association
ANOVA    Analysis of Variance
AQ       Additional Qualification
AQPERE   Québec Association for the Promotion of Environmental Education
          (Association québécoise pour la promotion de l’éducation relative à
          l’environnement)
ATST     Acting Today, Shaping Tomorrow: A Policy Framework for
          Environmental Education in Ontario Schools
B.Ed.    Bachelor of Education
BC       British Columbia
BGS      Brundtland Green Schools
CATE     Canadian Association for Teacher Education
CBU      Cape Breton University
Centr’ERE’  Interdisciplinary Research Center
CFE      Community Field Experience
CIDA     Canadian International Development Agency
CMEC     Council of Ministers of Education, Canada
CSQ      Centrale des syndicats du Québec
CSSE     Canadian Society for the Study of Education
DEEPER   Deepening Environmental Education in Preservice Education
          Resource
DESD     Decade of Education for Sustainable Development
E4E      Educating for Environment
EDD      l’éducation au développement durable
EE       Environmental Education (Éducation environnementale)
EECOM    Environmental Education and Communication
EEDD     d’éducation à l’environnement et au développement durable
EJE  Ecological Justice Education
ELC  Environmental Leadership Circle
ESD  Education for Sustainable Development
ESE  Environmental Sustainability Education
ESTE-PTE  Environmental Sustainability Education-Preservice Teacher Education
FIE  formation initiale des enseignants
FLAP  Fatal Light Awareness Project
FNMI  First Nations, Métis, and Inuit
FRQSC  Fonds de recherche du Québec–Société et culture
GBL  Garden-Based Learning
GEM Report  Global Education Monitoring Report
GMOS  Genetically Modified Organisms
GPA  Grade Point Average
ICT  Information Communication Technology
IEPO  l’Institut d’études pédagogiques de l’Ontario
IISD  International Institute for Sustainable Development
INTEI  International Network of Teacher Education Institutions
I-S  Intermediate-Senior
IUCN  International Union for Conservation of Nature
JK  Junior Kindergarten
K-12  Kindergarten to Grade 12+A22
LEED  Leadership in Energy and Environmental Design
LSF  Learning for a Sustainable Future
NAAEE  North American Association of Environmental Educators
NEP  New Ecological Paradigm
NGOs  Non-government Organisations
O/EE  Outdoor and Environmental Education
OEE  Outdoor and Experiential Education
OISE-UT  Ontario Institute for Studies in Education at the University of Toronto
OME  Ontario Ministry of Education
OSM  One Square Metre
OTC  Ontario College of Teachers
PR  Participatory Research
PBE  Place-Based Education
PEB  Pro-Environmental Behaviour
PEEC  Place-based Education Evaluation Collaborative
PISA  Programme for International Student Achievement
P-J  Primary-Junior
PoP  Pedagogies of Place
PPS  Participatory Problem Solving
PTE  Preservice Teacher Education
PT-EE  Preservice Teacher Environmental Education
SDGs  Sustainable Development Goals
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<td>SE</td>
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<td>SEPN</td>
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<td>SES</td>
<td>Socio-Economic Status</td>
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<td>SMEs</td>
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<td>SOSSOF</td>
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<td>SPF</td>
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<td>Science, Technology, Society and Environment</td>
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<td>Teacher Candidates</td>
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<td>TD Bank Group’s Friends of the Environment Foundation</td>
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<td>Toronto District School Board</td>
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<td>TE</td>
<td>Teacher Education</td>
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<td>TEIs</td>
<td>Teacher Education Institutions</td>
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<td>TEKW</td>
<td>Traditional Ecological Knowledge and Wisdom</td>
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<td>TPB</td>
<td>Theory of Planned Behaviour</td>
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<td>TRC</td>
<td>Truth and Reconciliation Commission</td>
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<td>UBC</td>
<td>University of British Columbia</td>
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<td>UK</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNCED</td>
<td>UN Conference on Environment and Development</td>
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<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>UNEVOC</td>
<td>International Project on Technical and Vocational Education</td>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<td>UNSD</td>
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<td>University of Ontario Institute of Technology</td>
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<td>Université du Québec à Montréal</td>
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<td>VBN</td>
<td>Value-Belief-Norm</td>
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<td>WECC</td>
<td>World Environmental Education Congress</td>
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<td>WGEE</td>
<td>Working Group on Environmental Education</td>
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About the Editors and Contributors

Editors

Douglas D. Karrow is Associate Professor in the Department of Educational Studies, Faculty of Education, Brock University. He teaches in preservice and graduate education programs. His research interests focus on environmental and sustainability education from the standpoints of preservice teacher education, curriculum, and pedagogy. Additionally, he is currently researching the philosophical insights of Martin Heidegger and their application to teacher education, environmental and sustainability education, and education theory writ large. His recent publications include the book Canadian Perspectives on Initial Teacher Environmental Education Praxis, several book chapters published in Springer series, and journal articles published in Philosophy of Mathematics Education Journal, Brock Journal of Education, Alberta Journal of Educational Research, Environmental Education Research, Canadian Journal of Science, Mathematics and Technology Education, and Journal of the Canadian Association for Curriculum Studies. Currently, he is Co-Chair of the Environmental Sustainability Education in Teacher Education Standing Committee of the Canadian Network of Environmental Education and Communication (EECOM) and a participating faculty member of Brock University’s Environmental Sustainability Research Centre.

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Chapter 1
Environmental and Sustainability Education in Teacher Education: Canadian Perspectives

Douglas D. Karrow, Maurice DiGiuseppe, and Hilary Inwood

As environmental degradation continues unabated, the need for environmental and sustainability education (ESE) and the development of an environmentally literate public intensifies. Current environmental issues, such as biodiversity loss, water scarcity, and climate change, are pervasive and global. More than ever before, there is a need for all citizens to address environmental concerns through education and action.

The title of this book, Environmental and Sustainability Education in Teacher Education: Canadian Perspectives, deliberately references “teacher education” as including preservice teacher education (pre-certification), in-service teacher education (post-certification), and various nonformal teacher education approaches (beyond Kindergarten to Grade 12, K–12 school settings). Most of the chapters focus on preservice teacher education, and a few examine facets of in-service and/or nonformal teacher education as supportive of preservice teacher education. The title of our book reflects our intent to be inclusive of the various facets of “teacher education,” writ large.

Faculties of education, in particular, have a critical role to play in providing Environmental and Sustainability Education in Preservice Teacher Education (ESE-PTE). However, studies have shown that for the last 40 years, Canadian faculties of
education have experienced many challenges in providing high-quality and effective ESE-PTE programs for their students (Lin 2002; Towler 1980). As a result, a National Roundtable on Environmental & Sustainability Education in Pre-Service Teacher Education (National Roundtable ESE-PTE) was convened in June 2016 at Trent University in Peterborough, Ontario. National Roundtable ESE-PTE was the first event of its kind in Canada and brought together key educational stakeholders who over a 2-day period engaged in a process of collaborative inquiry in which they discussed, debated, and analyzed key issues in ESE-PTE in the Canadian context, including past and current pedagogical practices in ESE-PTE; structural, programmatic, and economic challenges; theoretical and other explanatory frameworks; and critical areas of ESE-PTE in need of further research and analysis.

In general, National Roundtable ESE-PTE delegates agreed that embedding ESE in PTE remains a significant challenge for faculties of education across Canada, and that almost 40 years of scholarship and activism aimed at improving ESE PTE has resulted in relatively few significant gains. National Roundtable ESE-PTE was the most recent effort to change this untenable situation. The chapters in this volume were inspired by the rich discussions and debates that took place at National Roundtable ESE-PTE.

As National Roundtable ESE-PTE was concluding, the conference room was bristling with energy as delegates articulated their priorities for ESE-PTE, and multiple conversations were underway as they discussed and decided what was most important, moving forward (Fig. 1.1).

At this same time, delegates were moving enthusiastically to place their signatures on The Otonabee Declaration, a document describing key principles of ESE-PTE (Appendix 1.1), which delegates had collaboratively created only an hour earlier, and they warmly shook hands in celebration with colleagues who had been strangers just a few days previously. Many felt a strong sense of connection through their contribution to a new wave of activism regarding ESE-PTE, and rightfully so, since National Roundtable ESE-PTE was a remarkable event in Canadian teacher education history.

1.1 Historical-Developmental Considerations

Concerns about EE began to emerge in the early 1970s (Gough 2016), and recognition of the importance of ESE-PTE has been growing rapidly in the last decade. At the start of the UN Decade of Education for Sustainable Development (2005–2014), Hopkins and McKeown (2005) strongly recommended that teacher candidates (TCs) be provided with coursework in sustainability, and opportunities to develop skills to function as active citizens in sustainable communities. Hopkins and McKeown (2005) further recommended that TCs “understand the interrelatedness of the environment, society, and economy and have this interrelatedness be evident in their teaching and lives as community members” (p. 43). In 2010, the North American Association of Environmental Educators (NAAEE) established a set of
guidelines for the preparation of educators in ESE, and the following year, the United Nations Economic Commission for Europe (UNECE) published its own set of ESE competences, calling for all TCs to develop basic competences in ESE.

In Canada, the CMEC sponsored a study (Swayze et al. 2012) on Education for Sustainable Development (ESD) in PTE, recommending that dialogue, networking, and research be conducted in this critical area at national and international levels. Swayze et al. (2012) found that although faculties of education were making “modest but promising progress toward reorienting teacher education to address education for sustainable development” (p. 64), there was a divergence between individual and institutional responses, with individual faculty members often driving change in this area. Swayze et al. (2012) also recommended that “new avenues for communication on ESD research in Canada are warranted” (p. 65), as ESD in teacher education “is becoming an important area of inquiry” (p. 65).

A final recommendation from Swayze et al. (2012) confirmed the need for faculties of education and ministries of education to work together to strengthen ESE-PTE; however, National Roundtable ESE-PTE organizers found little evidence that this was actually happening, given that ESE lacked a prominent and/or consistent presence in most PTE programs. This seems to have occurred despite some Canadian provincial/territorial ministries of education having instituted formal policies, recommendations, and/or frameworks for environmental learning, requiring K–12 educators to develop students’ environmental literacy across the curricu-
lum (e.g., British Columbia Ministry of Education 2007; Manitoba Education and Training 2000; Ontario Ministry of Education 2009). In order to implement these provincial/territorial mandates fully, it was crucial for faculties of education to offer ESE-PTE programming.

1.2 Laying the Foundations for National Roundtable ESE-PTE

The foundations of National Roundtable ESE-PTE were laid by a small group of concerned educators working to build understanding in multiple traditions of environmental learning, including EE, ESD, Outdoor Education, as well as Nature-based, Place-based, and Ecojustice Education, to name a few. In this volume, we refer to these and related approaches to environmental learning by the expression “Environmental and Sustainability Education” (ESE). Creation of National Roundtable ESE-PTE was also inspired by studies on the state of ESE-PTE, including those of Towler (1980), Lin (2002), Swayze et al. (2012), and Sims and Falkenberg (2013), and by the proceedings of a Provincial Roundtable on ESE-PTE held in 2013 at the Ontario Institute for Studies in Education at the University of Toronto (OISE-UT). This Roundtable included over 60 environmental educators from across the province of Ontario who gathered to learn from one another’s work, share course content and pedagogical strategies, reflect on their common challenges, and decide how to better support ESE-PTE in Ontario. The Provincial Roundtable led to the establishment of a working group involving faculty members from Brock University (Dr. Douglas D. Karrow), OISE-UT (Dr. Hilary Inwood), Trent University (Dr. Paul Elliott), and the University of Ontario Institute of Technology (Dr. Maurice DiGiuseppe). This group quickly began working toward improvements in ESE-PTE in their own institutions and in producing publications such as the DEEPER guide (Inwood and Jagger 2014), Canadian Perspectives on Initial Teacher Environmental Education Praxis (Karrow et al. 2016b),1 and Initial Teacher Environmental Education Capacities (Karrow et al. 2016a). It should be noted that the following authors’ contributions to the previous publications appear as republications in this volume. Chapter numbers in this book volume appear in brackets following the citations: Karrow (2016a) (Chap. 7); Ostertag et al. (2016) (Chap. 8); DiGiuseppe et al. (2016) (Chap. 9); Gwekwerere (2016) (Chap. 10); and Howard (2016) (Chap. 11). An early version of Block et al. (2016) has been resubmitted here with significant revisions by Beeman and Sims (Chap. 12). By 2018, we saw measurable results from our roundtables, publications, conference presentations, and lobbying: four PTE programs in Ontario had new ESE components that all TCs needed to take to graduate. In addition, many new electives and extracurricular activities in ESE were added to these and other faculties of education.

1 These publications were generously supported by the TD Friends of the Environment Foundation and Trent University’s Symons Trust Fund for Canadian Studies, respectively.
Roundtables, in particular, enabled educators to work collaboratively to improve the state of ESE-PTE, first in Ontario and then across Canada. The ESE-PTE team believed that events such as this could prove to be an effective way of addressing ESE-PTE issues in the challenging environment of the decentralized Canadian educational system and of building enduring professional relationships.

The group’s main rationale for holding a National Roundtable was to bring together researchers, teacher educators, scholars, policy-makers, and community partners to disseminate research in ESE-PTE, share teaching approaches and strategies, and discuss the challenges of enhancing ESE-PTE. A combination of keynote speakers, research presentations, and working sessions would be offered, and through a collaborative inquiry process, delegates would be asked to analyze case studies; share programmatic challenges, pedagogical strategies, and expertise; identify new areas for research; and collectively create an action plan for moving forward. Information collected at the National Roundtable would be shared publicly via a digital communications hub. Overall, it was hoped that the National Roundtable would achieve four key outcomes: (a) development of a new network of ESE-PTE champions, (b) training and mentoring of TCs and graduate students, (c) stimulating new research, and (d) creation of a digital communications hub to support knowledge mobilization.

Following the development of a rationale and set of outcomes for the event, locating funding to support it was the next challenge. TD Bank Group’s Friends of the Environment Foundation (TD FEF) was quick to offer support, providing much needed seed money to get the planning underway. While a SSHRC Connection grant application was not successful, other funders contributed to the project, including the Dearness Foundation and Trent University. Furthermore, Brock and OISE made in-kind contributions, which went a long way to ensuring the National Roundtable’s success. This level of funding was enough to complete the planning process, launch a new website, and distribute promotional materials to faculties of education across the country.

1.3 Holding the National Roundtable

The National Roundtable ESE-PTE took place on June 14–16, 2016, at Trent University in Peterborough, Ontario. A total of 73 delegates attended the 3-day event, including teacher educators, researchers, deans, graduate students, teachers, TCs, policy-makers, and Ontario Ministry of Education staff. Participants represented eight Canadian provinces (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, and Newfoundland and Labrador), and a total of 27 postsecondary institutions, including 24 universities, two university colleges, and one community college. There were representatives from eight community education groups, nine school boards, and two policy-making organizations (the Ontario College of Teachers and the Ontario Ministry of Education) (Fig. 1.2).
The National Roundtable featured three keynotes, a variety of roundtable presentations on ESE-PTE, and three working sessions (Table 1.1).

The 10 roundtable presentations highlighted the theory, research, and pedagogical practices of 39 presenters in ESE-PTE (many of whom are featured in this volume). Four plenary working sessions and a number of voluntary off-site programs complemented the roundtables. Off-site excursions included a visit to Petroglyphs Provincial Park, yoga sessions, nature walks, a voyageur canoe experience on the Otonabee River (Fig. 1.3), and evening sessions at the Camp Kawartha Environment Centre, including a photo-share activity, Inuit games, an eco-puppet show, and entertainment around a campfire.

On the first day, Dr. Nicole Bell of Trent University provided the first keynote address, entitled “Anishinaabe Bimaadiziwin: Living Spiritually with Respect, Relationship, Reciprocity, and Responsibility” (see Chap. 5). Dr. Bell spoke about the deep connections between Indigenous education and environmental learning. On the second day, Dr. Lucie Sauvé from Université du Québec à Montréal (UQAM) presented “Transversality, Diversity, Criticality, and Activism: Enhancing E(S)E in Teacher Education” (see Chap. 4). This talk provided a glimpse into the work in ESE-PTE that she and colleagues at UQAM have been accomplishing in Quebec and beyond. On the final day, Professor Charles Hopkins, UNESCO Chair on Reorienting Teaching Education to Address Sustainability at York University,